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ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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RESEARCH WORK AND ITS APPLICATION.

Sam'l A. Hopkins, M. D., D. D. S., Boston, Mass.

In the profession to which we have the honor of belonging, we meet with a class of men who boast of the fact that they are practical. These are frequently men of rare manipulative skill and of great mechanical ability, and in a profession calling for the hourly use of marvelous dexterity and occupied much of the time in restoring impaired teeth to usefulness and in replacing lost teeth with artificial substitutes,—such men deserve and secure a large measure of success. Too frequently, however, the boast of being eminently practical is but a cloak to cover the inertia or indisposition which renders an individual unable or unwilling to follow the advance of students of science who are laboring unceasingly to thrust the reaping knife of original investigation into the ripening harvests of human knowledge that surround us.

Those of us whose privilege it is to teach, must frequently feel that among the instructors in our dental schools, there is a division of taste and interest too marked for the well being of the school, and a lack of concord which diminishes the force of our instruction and makes it less readily available for the uses of the student. We frequently have on the one hand an excellent body of intelligent men teaching operative and mechanical dentistry, orthodontia and prosthodontia, who have only a rudimentary knowledge of histology, pathology, and bacteriology, and who honestly feel that these and allied sciences have but little bearing on their professional work. Indeed, the very fact that while they have wilfully ignored these subjects, they have nevertheless achieved success in building up a lucrative practice, is satisfactory evidence to them that such knowledge has no more important bearing upon their professional career than Greek archaeology has to the work of a Hibernian laborer. On the other hand, in many instances, we are forced to depend for our teachers in the scientific branches upon men who have never studied dentistry. They are men of high attainments and are enthusiasts in science in which they are completely engrossed. They are unable to point out the practical application of their wonderful knowledge to the daily problems arising in dental practice, if, indeed, they have not lost sight of the fact that the chief value of such knowledge lies in its ultimate aplication. Medical education presents the same picture. Pathology, for instance, was originally studied in order that the observance of morbid processes might lead to the discovery of some means by which the practitioner could thwart the disease which gave rise to such morbid conditions. Today, pathology is studied for the sake of pathology, and its application to the needs of the practitioner is a secondary consideration, if indeed, it is not entirely lost sight of. Indeed, a professor of this science in one of our great medical schools was recently heard to declare that the application of his work was never thought of, and that he preferred men as his assistants who had no knowledge of the practice of medicine.

Such an attitude as this on the part of a teacher in our medical or dental schools might easily tend to stultify any interest which the student might have developed in the study of the biological sciences, if such interest depended upon the application of his studies to the practice of his profession. The value of research work cannot, however, be estimated by the use which immediately follows its announcement. Indeed, it is highly probable that so far as the ultimate benefit to mankind may be considered, the position of the eminent pathologist to whom reference was made is the best one that can be chosen; for it is quite conceivable that if a worker in the untilled fields of science should be oppressed with the nagging necessity of connecting all his results with some practical affair of daily life, his mental horizon would be woefully narrowed and his limitations would be so great as to render much of his work ineffective. In our great anxiety for results, we are prone to lose sight of the fact that the very spirit which spurs a man on to profound investigation may chafe at the suggestion of the utilitarian who insists upon seeing a prompt application of every recorded fact of science.

The study of science for science's sake is quite as inspiring to many minds as the study of science for its immediate bearing upon the problems of life. It must not be forgotten, however, that the storing up of scientific results could hardly be carried on with the enthusiasm which inevitably accompanies such work, were it not for the confident assurance that the time would eventually come when such results would be available for the needs of humanity. A striking illustration of this principle is found in the fact that the laying of the Atlantic cable was made possible by a mathematical formula, worked out nearly a half century before trans-Atlantic communication was thought of, and which had no practical application until the problem of bringing the two worlds into daily communication with each other was suggested. It was then that Sir William Thompson, now Lord Kelvin, remembered the experiments of the French mathematician, Fournier, in measuring the rapidity with which heat travels along an iron bar. By the application of Fournier's formula to the great electrical problem, which then engaged the attention of both countries, Sir William Thompson was able to assure the capitalists who sought his advice that a cable built according to the plans he indicated would be a positive success. The world has seen the vindication of Lord Kelvin's prophecy and has had reason to be grateful to Fournier for recording a scientific fact that for many had, seemingly, no practical application to the affairs of life.

For many generations, chemistry had been storing up facts the application of which, in many instances, was extremely problematical. Physiology began to advance and to avail itself of the results of chemical experimentation; results, which, in many instances, had been hitherto unavailable for any useful purpose. This union has resulted in the wonderful science of physiological chemistry which already has delved deeply into the problem of vital existence, and which gives promise of leading us to the very boundary line of human knowledge, where the material facts of human life and human thought become emerged in the unfathomable mystery of the spiritual. Instances are not wanting in medical and dental science wherein the investigations of scientists have been immediately followed by the discovery of a method of preventing or successfully controlling disease. Indeed, it may be confidently asserted that every advance from empiricism has come as a result of scientific investigation; and the most self centered, avaricious seeker after commercial success will welcome with enthusiasm, any scientific advance which simplifies his work, or gives promise of increasing his income. It is, however, the other class of scientific work, (that which is not immediately productive of utilitarian results) which is also worthy of our attention, and for which I am now pleading. Research work which has no immediate application to the needs of the world may fail to hold the attention or to excite the applause of the average man of affairs who prides himself on being practical. Yet this same work may still be of utmost value in pointing out the road and in clearing the way for some other investigator, who, with the start thus given, may successfully solve an important problem and reveal its bearing upon the world's work. Indeed, if time allowed, it would not be difficult to show that almost every piece of research work that has been of value in its application to human needs has had its inspiration in some other work which may perhaps have fallen far short of the practical requirements of mankind. To awaken an interest in Science for its own sake in our profession would be to awaken a broader intelligence, to give birth to new and better ideals, and to break the fetters of concentrated application to routine duties which make dentistry the most exacting and narrowing of the professions. Without decrying the necessity of discussing everything that has a bearing on the successful filling of a tooth cavity, I would suggest that a too frequent repetition of the old formulae may narrow our intellectual horizon and dull our perceptions; and when such discussion degenerates to the point of recalling the mythical experiences of the Dumas of our profession, our politeness is taxed unfairly and our time is unjustly wasted. Our politeness is taxed because when a man recites successful operations, performed by him, with the implied meaning that he alone could have performed them, and relates the marvelous cures that take place under his skillful treatment, we are all convinced that the speaker is romancing, but courtesy prevents our saying so, and, indeed, there is no way of proving the falsity of his statements. Upon the younger men the effect is discouraging, for they know that they themselves cannot achieve the exalted standard of skill claimed by such a speaker, and they have not learned to discount his claims. For these reasons, I would plead that clinical work be performed at the proper clinic, and not in the imagination of those rhetorical romancers who mistake the courteous silence of society members for credulous belief in their impossible tales.

I would plead, too, for an interest in subjects not directly applicable to the daily operations of our profession, because such subjects broaden our view-point and develop a sense of values which the too constant riveting of our attention upon the point of an instrument is apt to destroy. With this preface, and with an apology for bringing to your notice some unfinished work, and work which may be said to be unsuccessful in the fact that it has neither fulfilled my expectations nor revealed a field of application, I will call your attention to certain mouth bacteria which have the interesting property of producing mucin, and which may be found, on further investigation, to bear a casual relation to certain pathological conditions which we are repeatedly called upon to treat.

Mucin is a nitrogenous body found in several tissues of the body, and notably in connective tisue. It is also found in several secretions of the human body, and in certain secretions of animals belonging to different species. It is, as you know, found in mucous, and its viscid consistency is so well known that it is scarcely necessary to dwell upon it. The fact that bacteria are capable of producing a gelatinous substance has been demonstrated by a number of bacteriologists, and Doctor Black and Doctor Williams, some years ago, pointed out very clearly the association of this gelatinous substance with dental caries. In this connection, it is well to remember that all slimy products of bacterial activity are not necessarily mucin, and at the same time it will be well to remember that the production of mucin is not confined to a single species of bacteria. We have known for many years that, even microscopically, salivas of different individuals differ greatly, and we know, also, that the saliva of the same individual differs at different times and under different conditions of health. We have come to associate the stringy mucous-laden saliva with rapid carious action, and we have speculated as to the reason for this condition without receiving a satisfactory answer, except such as is found in the mechanical binding of the lactic-acid producing forms to the enamel walls of teeth by the gelatinous mass. Those who have never made the tests would be somewhat surprised to find that this ropey saliva is usually quite alkaline in its reaction, and that, in a majority of instances, there is a copious flow, and that this flow sometimes becomes very excessive.

If we should carry our observations still further, we would discover that this stringy saliva is a far better medium for the cultivation of bacteria than is a clear watery saliva, particularly if that thin, watery saliva is slightly acid in its reaction. In other words, bacteria multiply very much more rapidly in the thick, mucous-laden saliva, which has a marked alkaline reaction, than in the clear, watery product which has a neutral, or slightly acid reaction. An acid reaction in saliva retards bacterial growth, and is not usually associated with excessive carious action.

If we go still further, and cause our patients to follow the Fletcher method of excessive mastication, we shall notice that the saliva undergoes a change, and that which was thick and stringy becomes much more clear and is a less suitable medium for bacterial activity. This would indicate that the salivary glands, if stimulated in a normal way by proper mastication, are often capable of pouring out a perfectly healthy normal product in response to normal stimulus. It may mean that the reaction has become acid. It has been observed that after the drain upon the glands exacted by a meal a la Fletcher the mixed secretion of the mouth is frequently acid. Whether the saliva itself is acid has not been determined. An interesting problem in cytology is here suggested, which time will not permit me to discuss, but the fact may be regarded as established that healthy normal exercise produces healthy cell action resulting in healthy secretion. If we carried our observations still further, we might notice other peculiarities of the patients who secrete this ropey saliva which I have described. We would be apt to notice that these are patients who eat rapidly, and who do little chewing, and we should probably also notice that they belong usually to that type which we call nervous, but for our present purposes these observations are unimportant.

It has long been known that bacteria break up chemical compounds into simple elements which unite to form other compounds which are frequently simpler and more stable than the original combination. We have come to regard this property which bacteria have of producing fermentation as being their special function, and we know that life itself depends upon it.

The refuse matter of the earth is decomposed and changed into suitable food for plant life by the action of these microscopic allies of humanity.

In the human body proteids are split up into gastric digestive products by their action. Sugars are split up and a number of acids, such as ascetic, butyric, formic, and lactic, are produced. Starches may be changed to sugars and fats split up into fatty acids and glycerine by the agency of bacteria; and it may be reasonably questioned whether life will not become extinct when the antiseptic which will sterilize the alimentary tract has been devised. It has been pointed out by Doctor

Miller that the production of lactic acid in the human mouth cannot easily be carried beyond three-fourths of one per cent because of the destruction of the lactic acid bacteria by the lactic acid which they produce, so that in all experiments on the destruction of teeth by acids, we must take into account that the acid which produces the pathological changes in the teeth never reaches the strength of one per cent. Many bacteria are in another way victims of their own industry because they have the property of producing enzymes which are capable of digesting the organism which produces them and sometimes other organisms as well.

If one of the pyogenic or pus producing forms like the Bacillus pyocyaneous be grown for several days at the body temperature there will be found a scum on the surface of the bouillon. If the tube be thoroughly shaken and again placed in the incubator, at the end of three days a new scum will have formed. Repeating this operation each third day for about three weeks, you will find a deposit in the tube of broken down bacteria which fail to take the stain readily. Emmerick and Low explain this change by the development of an enzyme which first agglutinates and then destroys the bacteria. The bacteriolytic action is, according to Vaughan, the result of a digestive action upon the nucleo-proteids of the bacterial cell. There is some evidence that in the human mouth, which is never free from bacteria, enzymes may be formed which retard pathogenic activity, and it is not beyond the range of possibility that in the large number and variety of bacterial activity may be found compensating ferments which impose limitations upon the work of those bacteria that we have come to look upon as destructive to the teeth and to the health of our patients.

Mucin production is not limited to a particular mouth bacterium but a number of forms; B. subtilis, B. coli communis, B. megatherium, and others have the property of producing this substance. It is interesting to note that many of the lactic acid producing forms found in the mouth are not particularly active in the production of mucin, and this is a point to which I wish to call attention. While many of the lactic acid bacteria are capable of producing mucin when not engaged in the production of lactic acid, that is to say, when growing in a medium free from carbo-hydrates, these same organisms, in the presence of carbo-hydrates, will produce lactic acid and their mucin production will be reduced, if not entirely checked. An organism carefully studied by E. K. Dunham, of New York, produces mucin in large quantities in milk cultures but does not coagulate the casein, at least, for several days, and the whey becomes so slightly acid as to be hardly noticeable. Another peculiarity of mucin production to which attention was called by Leo F. Rettger, of the Sheffield Laboratory, Yale University, was that bouillon cultures became very slimy at a very early date but while this ropiness was very well marked, the mucin was difficult to separate; at a later date, when the ropiness had, in a measure, disappeared, the mucin was more easily precipitated. This mucin, you will understand, is precipitated by weak acids. He later accounts for the change I have mentioned by stating that as the culture grows older, a gradual production of alkali in the fluid increases the solubility of the mucin and in this way the liquid is rendered less slimy.

An organism which in this connection has especially interested me is probably the same as the one isolated from saliva by Von Lingelsheim, and called Streptococcus Brevis. The streptococcus medium of Black, and possibly the Micrococcus Nexifer of Miller, in all probability is the same organism, but unfortunately the descriptions are so inadequate that one cannot be sure of its identity.

It is supposed, with much reason, to have a casual relation to dental caries, and it is looked upon by some authorities as being the specific cause of dental caries. Much evidence is lacking, however, to establish such a claim and we are still far from demonstrating that caries is a specific disease caused by a specific organism.

This organism is a micrococcus arranged singly, in pairs, or in short chains, not over eight or ten in a chain.

It is aerobic and facultative anaerobic. It is found in great abundance in the mouth and in the deeper layers of carious dentine, if care be taken in its removal, this bacterium is sometimes found in nearly pure cultures. It does not liquefy gelatine, but its growth is slow, and in impure cultures it will be rapidly overgrown by other forms which will liquefy the gelatine.

On agar, we have a thin gray layer along the needle track. On potatoes, it grows well and forms a confluent white layer which can be pealed off easily.

In bouillon, the medium is always clouded by this form, and in this respect it differs from the streptococci proper which form long chains, as these latter leave the bouillon clear except where the conglomerate masses are formed. ts growth in bouillon and its production of mucin varies greatly with the quality of the bouillon. Differences in the medium which are little understood, and which are difficult to detect, will cause wide differences in the growth. These differences I do not fully understand, except that it grows much better in fresh beef bouillon than in bouillon made with beef extract, and the addition of glucose always checks the production of mucin and increases the production of lactic acid.

In this connection, it may be well to recall the theory of gelatinous plaques, which was propounded by Doctors Black and Williams some years ago. They believed that the lactic acid producing bacteria were glued to the tooth by this tough gelatinous substance, and while so held in contact with the tooth, they produced lactic acid which caused the disintegration of the cementlike substance which holds the enamel rods together. It is not improbable that these gelatinous plaques are composed of mucin which is precipitated by the weak acid produced by bacteria, and the further study of mucin production promises to throw additional light on the etiology of dental caries.

It has been my hope to point out in some definite manner the part which mucin played in the destructive changes known as dental caries, but further investigation is needed to show in the complicated bacterial life of the oral cavity how important a factor mucin production is.

To sum up, it may be said that mucin may be produced in the mouth by a variety of bacteria; just how large a number have this property is not yet known.

A mucin-laden saliva is favorable to the multiplication of bacteria, as is also an alkaline reaction.

Prolonged mastication tends to free the mouth from mucin and stimulates the glands to healthy action. Acid producing bacteria have, in some instances, the power of producing mucin, when not engaged in the production of lactic acid; but the medium favorable for the production of acid is unfavorable to the production of mucin.

Enzymes are undoubtedly produced by the action of the same bacteria which produce mucin, but the effect of the enzymes is not yet known.

"ETIOLOGY"

Remarks in the discussion of Dr. Patterson's paper on "Etiology," at the last meeting of the National Dental Association, Asheville, N. C., (revised and corrected).

D. D. SMITH, PHILADELPHIA: Mr. President—I am unfortunate in that I was too late in the room to hear Dr. Patterson's paper; from the discussions to which I have thus far attended I judge it to be upon the important subject of Alveolar Pyorrhea; the reputation of the author assures the value of the paper and I am sorry I did not hear every word of it. The discussions thus far have had to do chiefly with matter which is already in print, noticeably the recent papers of Prof. Edward C. Kirk, D. D. S., Sc. D., Editor of the Dental Cosmos, and Dean of the Dental Department of the University of Pennsylvania. As these papers have been so freely offered in this discussion it seems proper that I should allude to them also. The first of the three, if I remember correctly was presented at the meeting of the Odontological Society in New York in February last; the second one in Chicago about a month later; and a third, what seems a forced, untimely rehash of the other two, appears as the "leader" in the July Dental Cosmos.

One familiar with the paper, "Systematic Infection Due to Natural Teeth Conditions," has not far to look for the animus of this last exhausting effort in which we find Munkowski's liverless-goose playing such an important role in solving the problem of alveolar pyorrhea.

I made great effort to read and understand these papers as they came from the press. I have in my library the Standard Dictionary, Webster's Unabridged and the Century, and with their aid am hoping still to find some real and helpful meaning in them.

The time has been when I looked upon the dental text-book or the published article as embodying something of experimental knowledge and perhaps some useful information, but in later years my views of dental writings and dental teachings are undergoing a change. I think I have learned that much of the teaching in the dental schools, and a great deal of text-book and periodical literature would be vastly improved if subjected to radical revision. Even the editors of our dental journals, concerning whom, there is a wide spread belief that they are the sum of all wisdom and all knowledge, even they may imbibe serious errors and greatly lead astray in their teachings.

My attention was specially arrested by the article entitled, "A contribution to the study of Metabolism," hoping and expecting it would throw at least some light on the varying phases of pyorrhea, of which the author seems to be treating. It is with regret that I am compelled to say that in this article as in all others, practically nothing has been suggested which is at all calculated to arrest the progress or avert the consequences of this disorder. About the time Dr. Peirce put forth his theories, in which he mistakenly ascribed the origin of pyorrhea to the presence of uric acid in the circulation, I wrote of it, "pyorrhea is an affection of the mouth, generally in adult life, which is neither well understood nor intelligently treated; while it is surely destructive of the supporting structures of the teeth, its most baleful effects are seen in its influence in promoting general systemic infection."

In the discussions this morning, and especially in the remarks to which we have just listened, there is a manifest determination to force intimate relationship between so called "faulty metabolism" and alveolar pyorrhea. A hear-say case was cited, probably because no practical illustration came within the purview of the speaker; in this case the pyorrheatic condition, it was thought, disappeared with the clearing of the rectum of impacted feces. This is truly a wonderful observation and should entitle the man wtih hardihood to recite it before a scientific body, to a plated medal for his watch chain. I desire here to put on record that this discussion has not changed my opinion as already expressed in the least: I still maintain that alveolar pyorrhea is an affection not well understood nor intelligently treated.

In this paper "A contribution to the study of metabolism," we read, "Two facts which any one may verify upon careful investigation, prove the error of the position of those who regard the pyorrheal condition as the cause of systemic disturbance. First, the cure of pyorrhea does not cure the constitutional malnutrition."

Does the author quoted, "cure pyorrhea?" If so, by what means? Is not the whole tenor of his article as well as those in his "American Text-Book of Operative Dentistry" in the direction of alveolar pyorrhea as an incurable "disease?"

It should be noted that the presentation made by him is without illustration and apparently without justification in clinical experience. May we not reasonably ask for some proof of this rather bold assertion? "The *cure* of pyorrhea!" Suppose we request this author to present some cases of pyorrhea which he describes in his article as "that type of chronic suppurative nechrotic inflammation where some error in the nutritional process is a constant factor in the case," and tell us frankly and intelligently what he means and how many such cases he has treated and *"cured,"* as the result of "laboratory research," say in the past year; and in what particular cases he can show that the "constitutional malnutrition" persists after such cure. Some of us who are his neighbors, have had fragments of a practice bequeathed us which has afforded an opportunity to observe some practical office work; in view of this we may be pardoned if we ask for some more specific information, some tangible data, in verification of the statement that "the cure of pyorrhea," (seldom effected at the hands of any in the past,) "does not cure the constitutional malnutrition." What is this constitutional malnutrition? I challenge the presentation of one case in clinical experience or one basal fact, in proof of this statement. Let us now briefly examine the "secondly" of this paragraph:—"Second," he says, "a careful and intelligent investigation of the case" (what case is here referred to?) "will show that the malnutrition was a chronic condition long antedating the pyorrheal outbreak, which is therefore a symptom or indication of malnutrition and its cause." It is presumed that there is a thought as the basis of the above quotation, but it seems so hidden beneath word rubbish that the meaning is not apparent. "Malnutrition *was* a chronic condition long antedating the pyorrheal outbreak" (when and under what condition was the pyorrheal outbreak?) "which is *therefore* a symptom or indication of malnutrition and its cause." Is it "chronic malnutrition" that "is therefore a symptom or indication of *malnutrition* and its cause?" The prophet Isaiah when the rulers of his people had been long in expectancy and had boasted and promised great things for the nation declared that their boastings were but as the noise of wind. "We have not," says the prophet, "wrought any deliverance in the earth." Isa. 26: 17, 18.

I am impelled to ask have you, or you (pointing) after reading these articles, which were presented to the profession with "flourish of trumpets" and what appeared at the time as an untimely heralding of discovery, been benefitted? Are the inhabitants of the world in a way to be relieved, through these articles of the scourge of pyorrhea and mouth infection, even author proclaims that he has found "waste products in both urine and saliva which practically demonstrate that imperfect or impaired oxidizing power is the fundamental dietetic fault." (! !) And though as he further says "Munkowski threw light upon it by extirpating the liver of geese (!) and found that thereafter they excreted not uric acid as is the case with the *normal goose,* but instead of *uric,* they excreted large quantities of lactic acid and ammonia in quantative relations of ammonium lactate." (! !) Now, gentlemen, if you are not solidly converted to the theory that pyorrhea alveolaris is the result of "faulty metabolism" I would suggest that you use the "light which Munkowski threw upon it" in "extirpating the liver of geese," and thus learn that there is a "casual relation of pyorrhea to ill health as it is an active factor in the production of a so-called vicious circle which intensifies an original constitutional vice." And that these faults of metabolism of which the author of them claims to "have given but a cursory account are productive of lowered vitality in two ways: First, by depriving the organism of benefit expressed as high vital potential which is a result of the normal nutritional process; and, second, by producing toxic waste products which accumulate in the blood and still further depress the vital resistence of the cellular elements nourished by the toxic blood stream, and creating thereby a vicious nutritional circle." How long must the dental profession applaud and cover with fulsome praise such masterly nothingness simply because it is in the dress of the schools or under the cloak of science? For one I am ready to join the chorus in the church prayer, and say, from all such "faulty metabolism," "good Lord, deliver us."

A Member: I rise to a point of order. The gentleman should confine himself to the discussion of the report of Dr. Patterson.

The President: The point of order is not well taken. Dr. Patterson's paper had to do with etiology, and that is the matter being discussed.

Dr. A. H. Peck, Chicago: Will Dr. Smith explain the cause of the disease which is in the mouth? Tell us about it.

Dr. Smith: Pyorrhea is an offensive mouth affection attended with serious local and more serious *systemic* consequences. It is a true inflammation with discharge of pus and other effete pyogenic products directly into the oral cavity. The inflammation occurs in the tissues *about the teeth*—the alveolar process, the pericementum and the gums, but the inflammatory outbreak is due wholly to the presence of the teeth and the stagnant toxins which accumulate upon them. The etiology of this condition which has given rise to so much speculation and unprofitable discussion in the past is clear and plain when once its residence and mode of expression are considered and comprehended. There are no constitutional or systemic conditions or causes tending to develop pyorrhea other than such as may predispose to any disease. It is an inflammation due wholly to the presence of teeth and to the infection of their surfaces, an infection that is perpetually carried in the mouth. Pyorrhea in and of itself develops and sustains many grave systemic disorders hitherto unsuspected. The teaching that it results from uremic poisoning or that it is due to "faulty metabolism" is false teaching. While uremia and pyorrhea may be and often are associated, the presence of urea in the blood is not in the remotest degree a cause of pyorrhea, but the converse of this proposition—*alveolar pyorrhea is a principal cause of uremia*—is the statement of a true pathological condition. Uremia is a usual result of pyorrhea, due to the perpetual ingestion of mouth toxins—pus and other pyogenic products—which are constantly and inevitably carried into the circulation because the inflammation and its products are in the mouth. The constant presence of the irritating toxins in association with the teeth induces inflammation of the tissues at the gum margins about the affected teeth, and as the inflammation progresses the pyogenic products increase, and the gums, pericementum and alveolar tissues become more and more involved and withdraw from sections of the teeth; pockets are thus formed in the alveolar process beside the roots; these pockets retain and increase the infection and hasten loosening of the teeth. With all this, pyorrhea is readily amenable to intelligent local treatment when such treatment is instituted before the inflammatory process has progressed to hopeless destruction of the supporting alveolar tissue. Those who ascribe pyorrhea alveolaris to "constitutional malnutrition," "faulty metabolism," "lack of oxygenation in blood corpuscles," the presence of uric acid in the blood or saliva, or to any systemic infection whatever, are helpless and impotent in treatment. An edentulous mouth never yet developed pyorrhea; it can not be maintained in a mouth devoid of teeth; and extraction of any tooth or teeth about which it has occurred, will in every instance *cure* the pyorrheal condition, and that without any constitutional treatment whatever. The etiology of this affection is thus made plain.

USE GOLD MORE, AMALGAM LESS.

Dr. W. E. Driscoll, Braidentown, Fla.

There are times when a sense of duty impels us to urge upon our fellows convictions that have come to us with a force that impresses as being of vital importance. I was assigned the duty of bringing before this meeting a report on Dental Physiology and Etiology. I did not deem it appropriate to copy from text-books what I might on those lines and I found nothing new in searching through several leading dental journals published during the past two years. I also failed to persuade any member of our society to present a paper on those subjects. Hence I deem it best to try to discharge the duty I have hinted at, in the opening paragraphs of this paper, which I will now urge upon your serious attention. It is this:

I believe that a large proportion of our profession fail to perform in many cases the operation that would be best for the patient. This comes often from a dislike to urge upon a reluctant and unappreciative patient an operation that would necessarily be more expensive than a simple one. Then no doubt many fall into the habit of doing his work in the easiest way, largely from indolence, of which he may be unconscious. There is also often some excuse where one has practically exhausted his strength before he is called on for a hurried operation, but the excuse is not valid if the patient can be sent to a professional neighbor who will do what is proper.

One of the most common errors we see and most inexcusable, is filling bicuspids with amalgam that should be filled with gold. Of course this is not confined to bicuspids, but as I say, there is where we most commonly see this abuse. It is wrong in these teeth more than in molars, because they have less material to be wasted by temporary makeshifts.

I do not forget that men practice dentistry who cannot make a more permanent filling with gold than they can with amalgam. It is certainly the duty of such failures to adopt some other calling unless they can speedily change for the better.

Bicuspids should be more generally filled with gold because they are not as appropriate for crowns as molars, on account of the greater display of gold. There is not the same force in the excuse that they are difficult of access. My own experience in a "country practice" is that it is very difficult to induce a considerable proportion of patients to have gold placed in molars. Still there is not the shadow of a doubt that the man who will do so, and do good work, is serving his patient and his own interests far better than to use an article so unreliable as even the best amalgam.

I will say here that while I believe Dr. Black's formulas are amental characteristics of amalgam. It will not bear division our best dependence, they have disappointed me, as well as those intimately associated with Dr. Black himself. This is largely because of so many modifying conditions entering into the problem. Amalgam from the best formula may be, and very often is, made practically worthless by faulty manipulation. I do not say by some fault, but by many. I do not know all these faults, but I will mention some of them—Too much or too little mercury; too long or too short work in kneading the mixture; filling with the mass after it has commenced to set; or dismissing the case before the filling is set sufficient to retain its shape and prevent leakage, in other words, using too quick or too slow setting amalgam for the case in hand.

It is a great mistake to attempt to build up a large compound filling with amalgam without a suitable matrix. Building up such a filling piece by piece is going counter to one of the fundamental characteristice of amalgam. It will not bear division into many parts, and be reunited into a filling as perfect as if kept practically in one large mass, and pressed with much force into position without being chopped to pieces, and that makes the matrix indispensible in making large compound fillings. Hence it has been found that amalgam will often disappoint the most experienced and expert operator. In the hands of such operator, gold is far more reliable, though many believe there is little choice between the two materials when concealed from sight. Perhaps this mistaken belief comes partly from the following causes:

There is probably greater temptation with operators generally to avoid the sacrifice of tooth structure of doubtful integrity when gold is used than when amalgam is to be the material. The difficulty of getting reasonable compensation for a filling greatly increased in size from first appearance, will tempt many to utilize enamel walls too weak for reasonable permanence. Also for the sake of concealing the gold as much as possible, or from a hope that the projecting wall though weak may assist in retaining the filling, thereby making failure certain from the outset. Thus gold is blamed with failure where it would have been satisfactorily permanent had excavation been properly extended. Beside this frail enamel, very often a residuum of infected or deteriorated dentine is overlooked. Men fresh from college are especially prone to this, though removing defective dentine from the portions of the cavity in direct view, yet allowing enough to remain behind the wall nearest to them while operating, (and not directly visible), thus bringing failure in a year or less time. Others fail in filling by finishing gold and enamel with practically square borders at the cutting edges, or grinding faces when a substantial overlapping of gold at these points would prevent enamel from chipping at junction with gold, and antagonizing teeth would press the lapping portions toward the tooth, instead of away from it, as in the first case. To make such an operation practical where cutting edges are thin in incisors, the posterior plate of enamel must be cut away much more that the front portion, so that as much gold may be concealed as practicable, yet giving a gold backing of such strength as can be relied upon to stand all proper use.

In addition to this safeguard at cutting edges, the cervical wall must afford a substantial foundation for the filling to rest upon when force is applied to the filling in biting.

While I have read many arguments against retaining pits or points, I do not recall one favoring a combination of the groove and pit of points. The pit alone is prone to allow the gold to separate at its mouth, leaving nothing to hold the filling in position, and before the actual separation occurs it is not the best attainable support at the cervical wall of cavities. But a proper proportioned groove adds immensely to the security of the filling. Still one or more carefully prepared retaining points or pits, are necessary in getting these grooves filled without such movement of gold as to make the filling leaky and worthless. The pit also adds to the efficiency of the groove permanently, but should not be deep enough to endanger the life of the pulp, or check the enamel when gold is condensed in them. I never saw decay in a retaining pit, it is always exterior to such point. It is better to lay down safe rules for the use of retaining points, that to condemn them, and allow beginners to use them as they seem to do, almost universally, and in a way I am trying to prevent.

So far I have been silent on the subject of non-cohesive gold. I want to say that the best filling yet discovered or invented is non-cohesive and cohesive gold in proper combination. All cervical and proximal borders should have at least a lining of non-cohesive gold if possible to get room for it, and at the same time make the filling sufficiently firm in position, and this may be done as a rule.

There are positions where practically perfect borders can be made with non-cohesive gold, supported with cohesive gold, that cannot be made so perfect with cohesive gold alone. It is not long since I saw a very large compound filling in a molar tooth, made in this way by Dr. Allport, of Chicago, in 1855, now forty-nine years. It was to all appearances good for ten or fifteen years more. Remember, I am citing these points not as original, but to show why gold fails so often that many honestly believe that amalgam is just as good, at least in too many instances. I believe many fillings are made of different materials where crowning would prove far better, and also that teeth are often crowned that should be filled.

If this is elemental teaching, I am sure that many need it, judging from the failures seen by every practitioner. I presented to you last year my views on management of enamel borders, and extension for prevention, hence they are passed over here, but very essential if we are to get full value for the extra labor in making gold fillings instead of amalgam. If we neglect these essentials, our work will preserve the teeth such a short time longer than if not filled at all, that no point should be slighted in the remotest degree. After going to the trouble of contributing nine points essential to success, why leave one certain to undermine and make futile all our labor, as well as the loss of the patron's money to him, and infliction of pain to little or no purpose? It is faithfulness to details that gives the business of tooth filling a professional status. The patient cannot judge of our work on his teeth as he can, if intelligent, of the services of a mechanic serving him in other ways. He must depend upon our professional honor. This consideration justifies the dentist in advising his patient to incur expense that would look mercenary in other lines of business. And the dentist is mercenary who does not advise and perform the best that his patron pays for. I have purposely avoided reference to other fillings and inlay materials for the sake of brevity.

Let me recapitulate:

(1). I have felt it a duty to write what is here presented even if portions are elemental.

(2). It is our duty to insist on what is best though the patient may be unappreciative and reluctant to pay for the best.

(3). Gold fillings should be made more generally where amalgam is now used.

(4). A man who cannot make a better filling with gold than amalgam should change the character of his work, or his profession.

(5). When we must use amalgam, take every precaution to make the work as perfect as our knowledge of conditions will permit.

(6). Gold is held responsible for failures due to faulty manipulation, where if rightly used it would be far more permanent than amalgam.

(7). Neither grooves nor retaining pits alone are best, but should be used in combination.

(8). Non-cohesive gold should be used at all proximal borders when at all practicable.

(9). As professional men, it is dishonorable to do less than the best for which we can secure reasonable compensation.

—*Hints.*

DENTAL HINTS.

Dental Literature.—A dentist can be measured by his literature. It therefore behooves him to have a good dental library, and keep well versed in the leading periodicals of the day, or he will be left by the wayside.—*Hints.*

To Finish Amalgam Fillings.—Smooth your amalgam filling with a wet piece of spunk. As it is without fiber, it produces a beautiful, smooth finish. Every dentist should have a little spunk.—*Dr. X. Dodel.*

To Wash Out Wax from Investments.—Put the investment in boiling water and through a piece of *rubber tubing* of suitable length blow upon the wax. The bubbling rapidly dislodges all particles of the wax.—*Dr. X. Dodel.*

In washing out a diseased antrum or an abscess, use a hard rubber point on the syringe in preference to metal, the latter causing an unpleasant shock on coming in contact with the inflamed soft tissues.—*Dr. R. E. Collins, Dental Review.*

Dipping the plate into strong vinegar before inserting it in the patient's mouth will prevent any ordinary case of gagging. In extreme cases, bathe the roof of the mouth with a menthol solution applied on a pledget of cotton.—*Dental Summary.*

To Prevent Water from Gushing out of the Mouth While Syringing.—Ask the patient to close his lips, or, easier yet, hold the mouth-mirror so that the stream dashes against it and is turned back into the mouth.—*Dental Summary.*

Don't attribute unworthy motives to another practitioner because he joins some society, or because he attends church. The man who emits this variety of "hot air" usually spends Sunday at the operating-chair. He finds it pays better.—*Dominion Journal*

If from any cause the process has been exposed, pain can be instantly relieved by covering the exposure with a pellet of cotton saturated with Tincture of Benzoin. The application is also valuable in relieving painful eruptions of third molars.—*Summary.*

Immediate Repair of Gum Section.—The pins in the old section were broken off. With diamond drill cut retention cavities where pins were. Having secured platinum pins from other plate teeth, reset them in the gum section, using amalgam for filling material; then vulcanized.—*Forum.*

Removal of Silver Nitrate Stain from Tooth.—I use nitrate of silver, but as that stains the teeth I change the nitrate into iodide of silver by the action of iodine; this in turn may be discharged by ammonia, leaving the tooth stainless.—*International Dental Journal.*

Cleaning Gold Crown Bridges or Regulating Appliances after Removal from the Mouth.—Place them for a short time in a saturated solution of sodium dioxid. This will destroy the offensive accummulations usually present and render them aseptic and easy to polish.—*Dental Review.*

An easy way to polish between the teeth of a rubber denture: Take your engine and an odinary rubber polishing cup and a little pumice and water and use the same as if polishing the natural teeth in the mouth. You will be surprised at the results. Try it.—*Hints.*

Mouth Breathers.—Cement fillings especially in the front teeth, will last but a few weeks with mouth breathers on account of the dryness. Mouth breathers sleep with their mouths open, and the anterior teeth become very dry. The cement will crumble and wash out; cement fillings will last much longer where moisture is present.—*Hints.*

A SAFE GUARD.—When a tooth is badly decayed or broken down and difficult to treat without the medicine coming in contact with the surrounding tissues, and the secretions of the mouth intereferring, fill the tooth with cement, then cut a cavity through the cement filling to the pulp chamber. You will have a cavity with surrounding walls, and the case can then be terated as required.—*Dr. Gustavus North, Cedar Rapids, Iowa.*

A MATRIX FOR PORCELAIN INLAY.—I use gold for matrices; pack the matrix full of cotton (tight), and then drop melted wax on the cotton and pull it out with a hooked instrument. Invest in asbestos and burn out the wax and cotton; the little ash that will be left you can blow out with a puff of the breath, with nothing left to cause trouble.—*Dr. D. Barker, Items.*

Banding a Tooth.—In banding with gold a tooth having an amalgam filling, burnish over the portion of the gold coming in contact with the amalgam a piece of platinum foil and solder before bending the gold, thus obviating the danger of weakening the band by permeation of the gold with mercury from the amalgam.—*Dental Record.*

"TAKING THE BITE" FOR CROWNS OR BRIDGES.—For the purpose of taking bites for crown and bridge work, etc., modeling compound fills an important place, as it is easy to manipulate, sets sufficiently hard to prevent its being readily bent, and does not break when forced to a thin edge as does plaster.—*Dental Brief.*

CEMENT FILLINGS.—The durability of cement fillings, depends very much upon the manipulation of the material and upon the thorough dryness of the cavity during the operation. The cement must be thoroughly mixed with the broad side of the spatula, little by little of the powder incorporated in the liquid until the proper consistency is obtained. Always finish or burnish the filling towards the border of the cavity.—*Hints.*

After taking off the rubber-dam, it is well to always have ready a glass of water, preferably warmed. After the mouth has been rinsed, take a small piece of gauze, which may be bought in rolls and cut to suit as needed, saturate it with some cologne water and wipe around the mouth. You will find that it takes away the smell of rubber and leaves a pleasant odor.—*Frater.*

The Dental College of the Province of Quebec will be abolished at the end of this session, and dental education will be left in the hands of McGill and Laval schools. The title of professors appointed at Laval School are: Dr. Eudore Dubeau, Dean and Director of the school; Dr. Joseph Nolin, Vice-President and Registrar; Dr. J. G. A. Gendreau, Secretary and Treaurer. Other professors and lecturers will be appointed later on.—*Dom. Jour.*

A HANDY MATRIX FOR MELOTTE'S METAL.—A piece of brass tubing one inch long, one inch in diameter, and one-fourth inch thick on one edge, and tapering on the inside to 1–8 inch thick on the other edge, makes a very useful matrix for holding Melotte's metal dies. It is used exactly as the rubber ring that comes with a Melotte's outfit, only it is not removed from around the metal. By this method cracking a die is impossible. —*Dr. X Dodel.*

Crowning Live Teeth.—It has been my practice for many years to use a crown with band and without post in anterior teeth whenever devitalization has not been affected, for the reason that in all cass where it can be done upon the live stump the danger of the band coming into sight after a year or two does not exist; it is only the devitalized root that lengthens in that way, and especially in the mouths of patients of mature years.—*International.*

Pressure on the filling will force out the excess of cement only to a certain degree, and ten pounds is nearly as effective as fifty, and one minute's time about as good as any more in reducing the amount left in the cavity, which is always more than enough to occupy the space left by the removal of the matrix when porcelain is used. This does not alter the general rule that cement under pressure adheres in proportion to the amount of pressure used upon it.—*Review.*

USING THE CHIP BLOWER.—While preparing a cavity, avoid blowing the chips and light accumulation in the face of the patient. Place one hand as a shield over the nostrils of the patient, and then with a chip blower remove all accumulations. In cases where there is a putrescent pulp or a particularly bad odor—hold a napkin firmly over the nostrils and eyes of the paitnet before making use of the chip blower. This method of cleanliness suggested, will be very pleasing to the patient.—*Dr. A. P. Burkhart, Forum.*

Impression Taking.—Where impressions are taken of mouths having a high arch, I have found it very helpful to insert a little plaster with a spatula before placing in the cup. It avoids the necessity for using a large bulk of plaster in the cup and simplifies the operation. In partial lowers, also, this same plan works admirably. But no matter what the case may be, if an accurate impression is desired plaster is by far the best material.—*Brief.*

BOOK REVIEWS.

The Houseboat Book. The Log of a Cruise from Chicago to New Orleans, By Wm. F. Waugh, M. D. Published by the Clinic Publishing Co., Ravenswood Station, Chicago.

This little book of some 200 pages is the interesting of the trip of a houseboat from Chicago down the Mississippi River to New Orleans.

It is not only interesting but will be found instructive to those who are contemplating a trip of this character.

It will be found an attractive addition to any library.

A Text-Book of Alkaloidal Therapeutics.—Being a Condensed Resume of all available Literature on the Subject of the Active Principles Added to the Personal Experience of the Authors. By W. F. Waugh, M. D., and W. C. Abbott, M. D., with the collaboration of E. M. Epstein, M. D. The Clinic Publishing Co., Chicago, Publishers. 1904.

The authors in their preface say: We have long recognized the urgent necessity for a work upon Alkaliodal Therapeutics that should be as complete as the present knowledge of the subject will permit. The physicians who practice Alkalometry, are now counted by the tens of thousands and their number is constantly increasing and yet the "standard" text-books generally ignore this therapeutic movement and give no more space to the subject than did similar works two or three decades ago.

That this work is the result of hard work and research, a study of it will amply testify. There is none better of its kind.

The Doctor's Red Lamp.—A Book of Short Stories Concerning the Doctor's Daily Life. Volume II of The Doctor's Recreation Series, Charles Wells Moulton, General Editor. Pages, 343. Silk Cloth, Gilt Top. Price, $2.50. Illustrated. The Saalfield Publishing Co., Akron, Ohio.

This volume fully meets expectations aroused by the first volume of this delightful series. This is the first attempt to bring together a collection of short stories by different authors all concerning the daily life of the physician. The stories are by well-known authors of this country and Great Britain. A few of the stories are: "The Surgeon's Miracle," by Joseph Kirkland; "The Doctors of Hoyland," by Conan Doyle; "A Doctor of the Old School," by Ian Maclaren; "Dr. Barrere," by Margaret Oliphant; "A Gentle Maniac," by George Edgar Montgomery. The volume contains four full page illustrations, reproductions of famous paintings, appropriate in subject. The letter-press, paper and binding of the book are above criticism.

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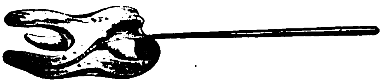

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EDITOR:
WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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EDITORIAL.

SANITOL CHEMICAL LABORATORY COMPANY.

The two thousand or more dentists who are stockholders in the Sanitol Chemical Laboratory Co., will no doubt be glad to get a line on what has been going on.

About eight years ago a corps of solicitors visited dentists throughout the country and delivered themselves of a talk something like this: "The Sanitol Chemical Laboratory Co. has been incorporated under the laws of Missouri, for the purpose of manufacturing and marketing the Sanitol tooth powder, paste and brush. It is capitalized at $200,000.00, divided into 20,000 shares of $10.00 each. We propose interesting a large number of dentists by selling them a few shares of stock each, no one man being allowed to purchase more than twenty-five, by this means getting their co-operation in placing the goods before their patients. Samples will be sent you which you can test thoroughly before you prescribe the preparations."

The stock was to be paid for part in cash and part from the dividends, which it was estimated would run as high as twenty-per cent.

Assuming the preparations to be good, there was no reason why a few dollars could not be invested to advantage, and it was supposed at the time that about 1,000 dentists took on an average of ten shares each.

A direct contract with the company was signed, and it was the understanding this stock was owned by the company, and the money paid and the dividends applied to its payment, were to go into the treasury of the company for the expansion of the business.

It is a fact, however, that of the entire capitalization of $200,000 every share was voted or distributed as follows:

	Shares.
Herman C. G. Luyties	15,000
F. Augustus Luyties	4,950
F. J. Rein	50
	20,000

It is apparent from this that the dentist was buying his stock from Mr. Luyties and that the money paid for it went into his, rather than the company's pocket.

It would be interesting to know the price H. C. G. Luyties paid for the stock that he later sold to dentists at $10.00 per share.

The latter part of 1898 notice was received by stockholders that it was proposed to increase the capital stock to $500,000. Some of the reasons given for this were that more dentists could then be interested, thus increasing the business, and also that more capital was needed. (It was supposed at the time that it was the company that needed more capital, but developments showed that this was a mistake and that it must have been Mr. Luyties who needed the money.)

The increase was authorized and at the same time the board of directors voted to purchase from H. C. G. Luyties the formulae and trade mark on Sanitol tooth powder, paste and brush for $300,000. This was paid by the entire new issue of stock being made over to Mr. Luyties.

It would almost seem as though this should have been enough to satisfy this gentleman but in 1903 the capital stock was increased to $1,000,000.

This has not all been issued, the financial statement of December 1st, 1904, showing capital stock issued, $785,200.00.

Of the $285,200 issued, however, $200,000 was disposed of by purchasing from H. C. G. Luyties the formulae and trade marks on

A toilet powder	$50,000
A bath powder	50,000
A shaving foam	50,000
A face cream	50,000

These were purchased notwithstanding the fact that the company had already bought the trade mark for over a quarter of a million dollars, and that the formulae can be had in any Pharmaceutical Formulary.

The above hardly needs any comment. The small stockholders (the dentists) have been bamboozled from start to finish for the enrichment of Herman C. G. Luyties and they should get together at once.

Some time ago the stockholders in Boston got together and organized the Sanitol Stockholders Protective Association, and they are now making an effort to get every stockholder to join. The secretary attended the annual meeting of the Sanitol Co. last December, and we expect to publish his complete report next month.

It seems to be the consensus of opinion at the present time that a three years' course with a high school graduation as a preliminary requirement will be sufficient in the way of dental education for several years to come.

If the committee on colleges is composed of wise men they will go way back and sit down.

Their work is accomplished and it is now up to the National Association of Dental Examiners to accomplish something in the line of the interchange of dental license. This is a crying need—one of great importance to the profession—and is in their legitimate line of work.

Elbert Hubbard, The Sage of East Aurora, says that there are four classes of men: Those who can do the right thing without being told, those who can do a thing when they are told once, those who can only do it when necessity kicks them from behind, and the fourth class, who cannot do it even when they are told twice and some one goes along to show them how.

THE TRUE STATUS OF THE PULPLESS TOOTH.

By D. D. Smith, D. D. S., M. D., Philadelphia, Pa.

The pulpless tooth as an organ is unique, and sustains unique relations among its confederates. It may be defined as a living organ with the greater part of its substance dead matter. Imperfectly understood, it has been perhaps more frequently the subject of experimental conjuration than of rational and scientific treatment. It seems to live in an atmosphere of suspicion and prejudice, for reasons not well defined nor consistently explained. In the minds of the laity it is universally associated with a "blackened" crown and rapid decay. In the profession it is almost as commonly esteemed an erratic organ, with sporadic disturbing tendencies impossible to control. By some it is thought to be of necessity an indicator of weather changes, and an inevitable sleep-disturber. Without accepting any of these as necessary conditions, we know that, as frequently treated, it is the cause of many aggravated and serious disturbances, such as pericementitis, facial neuralgias, dental abscesses, and various pathological conditions of mouth, ear, and brain. This paper is contributed in the hope that the status of the pulpless tooth may be better defined, and that methods of practice may be suggested for its better conservation.

The largest and most practical conception of a tooth is not that which comes from studying it in its anatomical make-up of pulp, dentin, enamel, and cementum, with all the microscopical minutiæ relating thereto as found in the text-books; it comes rather with the view presented when studying the sources of its derivation, development, sustentation, utility, and kindred phenomena. For practical comprehension of the pulpless tooth no better division can be made of it than that most natural one of crown and root, for in this we have distinctly set forth the sources of sensation and nutrition distributed to it. Consideration of a tooth, whether physiologically or pathologically, should never lose sight of the fact that its utility is wholly dependent upon its secure attachment in the alveolus, and that this attachment is not alone mechanical, but that it is a vital living union practically, if not wholly, *independent of the pulp.* This attachment or living union, so very important for both comfort and utility in the tooth, is dismissed in the text books with the remark that it is an articulation belonging to the order gomphosis.

The permanent saving of a pulpless tooth rests upon the fact that there is a source of nutrition to the cementum maintained wholly independent of pulp action, and that nutrition of the root is practically unaffected by the destruction of the pulp. With the death of the pulp there is death of the whole of the *crown* of the tooth; the enamel and dentin are left absolutely without sensation or nutrition. Whatever change comes to the crown of the pulpless tooth is of a distinct disintegrating, retrograde character, tending directly to undermine its integrity. The disintegration will be rapid or gradual in proportion to the character of the individual tooth. The crown of a first permanent molar which erupts at six years of age, if devitalized at eight to twelve, will lose its cohesive strength, become fragile, and seem to melt away under the adverse conditions to which it is ordinarily subjected in the mouth in very limited time, while a thoroughly calcified tooth devitalized as to its crown at or near maturity will generally complete its normal period of usefulness the root being properly cared for without visible evidence of the important loss the tooth has sustained. These phenomena are so well recognized that a statement of them might seem trite but for the bearing that they have upon other and less familiar facts and observations.

While with the death of the pulp there is complete cessation of vital function in the crown, the vitality of the *root*, except in its dentin, is not interrupted or lessened. The cementum, with its membrane, is the most important tissue for the conservation of the tooth; hence the peculiar emphasis attaching to the fact that the cementum receives its nutrition and life from a source independent of and practically unaffected by devitalization of the pulp. Articulation with the alveolus also, that most important of the tooth's relations, remains unaltered, and there are substantial reasons for assuming that the functions of absorption and nutrition in the cementum are not interfered with. Pulp endowment, in so far as it affetcs healthful union between root and alveolus, might be dispensed with without detriment after the tooth is fully erupted.

It is in place at this point to allude to that practice (possibly "fashion," "craze," or "fad" would better express the meaning) which holds so lightly the virgin alveolo-dental articulation that it breaks it up at pleasure; in other words, it extracts, mutilates, and replants apparently without consideration or reason and with no regard to the fact that this all-important relation once disturbed is never certainly restored. Such practice may attract attention and possibly gain fleeting notoriety, but it is wholly at variance with the laws governing nutrition as exhibited in other parts of the osseous system. Extraction destroys the life of the cementum and of the pericementum also. Excision of the root, or denuding it of cementum, deprives the root of the only tissue through which restoration to a vital, nutritive union with the alveolus is possible.

A replanted tooth may, for a time, present the appearance of having resumed its normal relations, but it is a matter wholly undemonstrated that the pericemental membrane, when once its connection with the alveolus has been broken by extraction, ever resumes its true function,—that of nutrition of the cementum. Replantation under the most favorable conditions, as, quick replacement of single-rooted occluding teeth, with no disturbance to root or membrane, is but an experiment in any case, and is frequently, if not usually, followed by beginning absorption of the root within a brief period. The period of usefulness for such a tooth is bounded by months rather than years, so that if the end sought is permanent restoration to usefulness the object is not often attained. "Extraction," "excision," "treatment out of the mouth," "replacement," may sound to the inexperienced as dento-surgical operations of magnitude and importance, but the procedure is unjustifiable from any surgical standpoint or from any good results yet born of it, it being physiologically incompatible with the function of the tissues involved. And if this be said of *replanting under favoring conditions,* what shall be said of the modern operation of *transplanting,* that process which selects months-old, dried specimens to plant in artificially prepared cavities in the jaw? Can any preparation of such a root, as shaping, polishing, filling, or disinfecting, restore to its dead cementum or pericementum life that shall reunite it in a nutrient union with osseous tissue in which it may be implanted? As well might we expect to see the fulfillment of Ezekiel's vision in the valley of dry bones, or to realize that wonderful contemplation of a young professor in one of our dental colleges whose enraptured vision beheld teeth shaped from animal ivory, and even porcelain, planted in openings made vacant through extraction, as that the dried cementum on the root of an extracted tooth should ever be revivified and renourished through the instrumentality of the pericementum. One of two results must follow the operation of replanting or transplanting a tooth; either there will be renewal of the nutritive function in cementum and pericementum, or there will be elimination of the tissues of the root through absorption or suppurative displacement. Living tissue abhors dead matter, and cannot be induced to enter into permanent association, much less vital union, with it. The reunion between the implanted portion of the tooth and the jaw which for a time seems to take place is more apparent than real; the discolored gum-tissue and the retarded circulation reveal that the union is more mechanical than vital.

But to return to the study of the root portion of an undisturbed pulpless tooth. *It* is a vital, living organ, retaining and exercising function even as when the pulp distributed sensation and nutrition to the dentin and enamel. Engorgement of pulp-tissue resulting from a recent devitalizing application may, and frequently does, produce hypermia of the pericementum, but the resulting irritation quickly subsides after the removal of the devitalized pulp. There are neither necessary untoward cemental or pericemental symptoms, nor change in the function of these tissues following the removal of the pulp. This operation, therefore, accompanied with proper disinfection of the tubules and of the intertubular matter, necessarily implies uninterrupted normal function of the tissues that furnish vital attachment between root and alveolus.

Pulpless teeth when properly treated are wholly comfortable; not weather indicators, not erratically subject to periodontitis, alveolar abscess, and other pathological conditions, but teeth with a favorable prognosis in all essential particulars.

Pulpless young teeth, that is, teeth which have lost their pulps before the vascularity of the cementum has been restricted by the contraction of its lacunæ and canaliculi through deposits in its substance, are far more subject to cemental accretions, or so-called exostosis, than the same teeth with living pulps. This is by no means an unfavorable condition, as through it the territory of normal circulation is increased to the benefit of the tooth.

A noticeably frequent result of pulp-destruction is a closer, firmer union of root and alveolus. This is probably due to two causes: First, an increased tendency to a deposit of cemental tissue on the surface of the root; and, second, the entire obliteration of calcific deposit through pulp influence. The author, from careful observation, believes that a pulpless tooth which has never been the subject of pyorrhea alveolaris is practically, if not entirely, exempt from that trouble; and that devitalization and removal of the pulp in the beginning of this inflammatory condition is attended with the most satisfactory results.

The value of a pulpless tooth should not be estimated from the condition of the natural crown, as *it,* with present methods for permanent crown restoration, is the least important part of the tooth. The *root*—the living part—and its surroundings, that upon which the permanent comfort and retention of the tooth depend, should always form the basis of judgment and diagnosis. It the root portion of the tooth be firmly in vital union with the alveolus, and without pyorrheatic tendencies, the condition of the crown, whether much decayed or broken, or whether wholly gone, is not a matter in the smallest degree affecting the possibilities of restoration. A crown having the appearance of the natural tooth, and practically indestructible, can be supplied on any good root, and on many very badly broken ones, in any part of the mouth. That root which has an uninjured pericemental connection never inquires as to whether the crown it is supporting is natural or artificial, but performs all the functions of a tooth with uncomplaining fidelity.

ity of access, to deal with a root or roots devoid of crown than with a tooth having a crown susceptible of contour restoration by means of a so-called filling. We conclude, then, that the pulpless tooth, with or without a crown, is a living organ of the economy, and to be treated as such. It may be removed or extracted when obviously demanded for cause, but *never for treatment.* Special care not to pierce or otherwise injure the cementum or its membrane, to thoroughly remove all pulp decomposition, and to disinfect the tubular and intertubular matter is demanded in its treatment. To accomplish this there may and should be rather free removal of the dentin from the thicker portions of the root, care being exercised not to trench upon the cementum and to leave the apical third practically undisturbed. The one root-dressing and disinfectant than which nothing else is demanded, as nothing acts so well, is pure wood creasote. If it be proper to speak of specifics among remedies, creasote is a specific as a root-dressing, acting to promote harmonious relations between the devitalized dentin and the living cementum. It may be tightly impacted on raw cotton and sealed in a root from which an aseptic pulp has been removed, but it should never be so applied in a septic root.

Removal of so much of the dentin as may be determined upon, enough at least to gain free access to the root-canal, and thorough cleansing of the root of all septic matter, should be followed first by instrumental applications of creasote in the canal, and this in a few hours by a few fibers of saturated cotton placed loosely in the canal; and this again by cotton more closely packed, until the creasote and cotton can be tightly sealed in the root. When the cotton is withdrawn from the sealed root having the odor of the creasote only, the canal may be permanently sealed with filling-material, or fitted with a post in cement, with perfect assurance of future comfort.

Successful treatment of a tooth having a septic pulp, accompanied with tendency to pericemental trouble, requires judgment and experience, which no details in a written article can impart. One point, however, may be emphasized to great advantage,—viz., that no septic root should be sealed with a permanent filling without having first tested it with a cotton and creasote dressing; for not until the creasote permanently overcomes all other odors is the root ready for filling.

It has yet to be fully comprehended that *"methods"* of filling, as well as filling-materials themselves, are wholly subordinate to preparatory treatment of the root; and that that treatment is best which best promotes healthful nutrition of the cementum by the pericementum, remembering that whatever assistance may have been imparted through the living dentin by pulp influence is withdrawn in the devitalized tooth. The effort should therefore be to hold the devitalized dentin forming the body of the root in harmonious relation to the life of the cementum. And this object is much more certainly accomplished with creasote than with any other remedy.

It is not the purpose of this paper to discuss root-filling materials or their methods of use; crowns, or methods of crowning; but after an experience of some fifteen years in the use of amalgam for setting the Bonwill crown it is wholly in place to raise a voice of warning against the use of amalgam in roots, either as a filling-material or for the setting of posts. This latter operation can be done with greater facility and with equal security by the use of the non-irritating oxyphosphates, themselves reliable root-fillings and of adequate strength for securing posts. The oxychlorids are perfect root-stoppings, and to be preferred above all others in pulpless teeth retaining natural crowns.

Reference has been made to the fact that a crown having the appearance of the *natural organ* can be securely applied to *any* root having the alveolo-dental articulation in a normal physiological condition. Emphasis should be given this statement, and an energetic and most emphatic protest raised against the increasing use, both in crown- and bridge-work, of the disfigu ing gold crown. Perhaps nothing cheapens dentistry more or more justly subjects it to jest and ridicule than the present unseemly and wholly unnecessary display of gold in and on the teeth. Gold crowns are admissible only on the roots of molars, where in ordinary movements of the mouth they are not exposed. Incisors, cuspids, bicuspids upper and lower, and upper first molars can be readily crowned with a band and post, so constructed that the porcelain face only shall be exposed, while all strain of mastication and occlusion is thrown upon the gold, which is entirely concealed. For first and second individual lower molar roots there is nothing comparable to an all-porcelain crown, of a construction which permits of fitting and setting the posts independent of the porcelain, on the principle of the Bonwill crown. Such crowns carefully adjusted and set in a good oxyphosphate, form a tooth which for durability and appearance leaves nothing to be desired.

We are thus led to the inevitable conclusion that the pulpless tooth is a living organ, maintaining, when properly treated, the same vital relations with the alveolus as when it carried a living pulp; that it is susceptible of perfect esthetic restoration, and that for comfortable retention, utility, and durability its prognosis is most favorable.

The Advantages and Disadvantages of Porcelain Inlays.—Some of the advantages of porcelain inlays are as follows: Fillings can be inserted which only the expert can detect. They are non-conductors of thermal changes. The margins of cavities filled with proclain are not readily attacked by caries. The patient is relieved of the excruciating pain of adjusting rubber dam clamps for cavities extending beneath the gum. Nervous strain on both patient and dentist is lessened. Porcelain gives a better masticating surface than metal. Busy patients need not spend so much time in the dental chair.

The disadvantages of porcelain are: The friability of porcelain causes it to fracture readily. It is impossible to bevel the cavity margins to protect the enamel. It is difficult to match the color of the natural teeth. The cement used as a retaining medium may cause a change of color in the tooth or inlay. The cement will be dissolved unless there is only a thin film used as a retaining medium.—*Summary.*

MECHANICAL DENTISTRY—A MEANS OF RETENTION OF SUCTION PLATES.

By Dr. J. H. Crossland, Montgomery, Ala.

By the decree of our worthy presiding officer it is my duty to seek to augment the interest which will, on this occasion, be aroused on the subject of "Mechanical Dentistry." It is not our intention to seek to throw additional light on the well-beaten paths of either the art or the science of this deep and beautiful subject. No experiences shall I relate, merely suggestions.

Several years ago, while examining a mouth, the familiar spectacle of the tissues of the palate drawn down until they had filled one of those so-called "vacuum chambers" attracted my attention by the unusual extent of the protrusion and the distinctness of its outlines, and also by the healthiness of the parts. It occurred to me that a device by which the same force that produced it could be made to accentuate, or even produce, ridges and eminences with retentive forms, as well as conducive to æsthetic effect. Soft rubber, in conjunction with vulcanite and metal forms, suggested itself to me. The remaining teeth, when any are present, and also the devices which have been used for the retention of the interdental splint might be used as a means of retention for such an appliance, the same, of course, to be made adjustable by the patient. The old-fashioned spring attachments might also be used. A bulb attached to a rubber tube might be used by the patient to apply additional pressure during leisure moments.

Of course the suction device could, in most cases, have teeth attached to it to induce the patient to submit to the annoyance until more favorable conditions could be established and a firmer and less cumbersome denture inserted.

Matters of detail are here only matters of theory, and are left to those who may think sufficiently well of the suggestion to endeavor to convert it to practical ends.

Two questions naturally arise: Can ridges and undercuts be produced in this way? If so, what of their permanency?

The idea that they can be produced thus is, in our humble opinion, not merely an hypothesis, but a well and firmly founded theory, based on the familiar fact that such has been done by air-chamber plates so many times. There is no reason apparent to me why the hardest tissues, usually covered by plates, should yield to this force, and the softer ones fail to do so.

As to the permanency of such ridges, or eminences, I can only say that if my observations have not misled me, these protrusions which fill the air chambers do not pass away, even when new plates have been inserted.

It is not the intention to claim too much for the idea, but, in this humble opinion, the theory advanced is a sound one, the question of its utility being identical with that of its practicability.

The idea is original with me. If it is not new to all of you, it may be to some.

AMALGAM AND ITS TREATMENT.

By David Genese, D. D. S., Baltimore.

Demontrated at the Northeastern Dental Association, Oct. 20, 1904.

All practitioners are familiar with amalgam fillings that are presented to them after being in the tooth for sometime and show discoloration and shrinkage around the edges, though a bright center may be left.

Though the greatest care has been exercised in inserting them, the failure is the result of failing to extract the free mercury that has been incorporated with it to form the amalgam paste which has oxidized on every particle of it, and which in a dry state cannot be gotten rid of.

Trituration in the hands or mortar of earthenware or glass does not incorporate the mercury thoroughly with the metal and as it presents a dry grey granulated appearance more mercury is generally added rendering it impossible for the mass ever to be thoroughly hard and compact.

I pointed out some years ago the advantage of triturating the metal and mercury between two soft surfaces. For this purpose I used a rubber pestle and mortar.

Care should be taken to add the mercury very carefully and little at a time until a dry granulated mass is obtained slightly adhesive in particles to each other. It is then ready to treat with the acid process which I have altered from the previous one given.

I take nitric 1, muriatic 2 parts and add to this a little scrap gold and allow it to dissolve. I then add the metals entering the composition of the amalgam and form a stanate of gold. When this is thoroughly dissolved I dilute with distilled water and bottle for use.

It should be strongly acid to taste but not strong enough to stain the hands.

When this fluid comes in contact with the amalgamated mass it has a chemical action of uniting all the metals and causing the free mercury to come to the surface at the same time removing the oxides.

It will then be found that instead of too little mercury, more than an abundance is present.

The excess should not be removed at this point.

Wash away the acid liquid with warm water, and add to the metal mass a mixture of liq. pot. dilute with equal parts of water. This will finish the amalgam to a very plastic and white condition.

Wash again in clean water and dry on white blotting paper.

It is now ready for use.

Expel all surplus mercury thoroughly and pack into the tooth with warm instruments with a rotary burnishing motion. Contour and allow fifteen or twenty minutes to elapse. It is then ready to carve up and polish.

Amalgam thus treated will not shrink or discolor.

If a very hard amalgam is required, moss fibre gold may be incorporated into it at the first stage mentioned and it will be thoroughly intermixed with the inferior metals and give the finished filling the appearance of platinum. It will set very rapidly, take a bright finish and when ground to contour the edges will be firm and close to the tooth.

No free mercury being left in the mass by this process it does not cause it to soften at the edges where the mercury accumulates in untreated alloys and becomes detached by the friction of masticating and removed by the fluids of the mouth.

The mercury used by me has been also treated to remove impurities in the following manner:

Put into an evaporating dish the mercury and to this add nitric acid diluted about one-fourth and add pumice powder to cover the top of the mercury about one inch. Place this in a sand bath over a Bunsen burner and heat to 100° F. Allow this to evaporate to dryness but be sure it does not get over-heated. Use a thermometer in the pumice and watch it. The mercury will be freed of impurities and can be strained and bottled for use.

A pivot made with amalgam and gold, to fit an ordinary root canal was shown and could not be broken by anyone present.

GOLD INLAY.

By A. M. Jackson, D. D. S., Macon, Ga.

The Great Creator and Law Giver of the universe has not seen fit to form any two crystals exactly the same, or make two leaves on the same tree an exact pattern of each other. This same law holds good in the animal kingdom as well.

With varied and mixed races in different climates—the various classes of teeth in the same mouth receiving their calcifying salts at different periods during childhood—pathological phenomena at different times with environment multiplied and ever changing— with all these things to consider; the true dentist finds ample use for each and every filling material on the market that carries with it a semblance of merit. But gold is King. It is not only the sheet anchor of American dentistry, *but of all dentistry.* The expert porcelain worker depends upon it for the most perfect matrix; and where aesthetic appearance is not a potent factor, far better would a majority of the fillings be if the matrix had been filled with gold. It could then be ground, polished, or burnished to perfect fitting margins after being set in place. In occlusal cavities no chipping of enamel or inlay edges would be found. Where edge-strength is demanded we have no material equal to the gold inlay. This gives to the gold inlay pre-eminence in contour work.

The general methods of cavity preparation for inlay work that has been described and illustrated by various writers during the past few years hold true at the present time. I shall not attempt a description in detail. Thorough, easy, and direct access to the cavity is absolutely necessary. Very deep and complex cavities should be reduced to simple form by use of cement before the matrix is formed. Slightly beveled margins are preferable.

For the matrix in large restorations use No. 120 rolled gold membering never to locate these pins where they will interfere with the easy removal of the matrix when necessary. Very long pins are seldom needed. A few short pins well arranged give surprising strength to retention.

Iridio platinum wire is best adapted for these retainers, and should be tacked to the matrix with a bit of solder before the final burnishing.

If the cavity is large burnish a part of your matrix thoroughly to a convenient margin, remove and flow in a bit of 22K solder then hold this rigid portion portion firmly in place and burnish a little farther, flow in more solder, so on to a finish of the whole, when you will have a stiff yet perfect fitting matrix.

Then with the matrix in place build your filling of wax right on the tooth, carve up the contour and occlusion as desired. Then remove the matrix and wax filling carefully, all together.

This should come away without any pull or drag. If it does not the cavity formation or position of retaining pins are at fault and must be properly arranged before further procedure.

When all is right just here, and you have a restoration of the corner of upper incisor, then cover this wax inlay as you have it with No. 30 rolled gold foil except the lingual aspect. Then carefully paint the inside of your matrix with whiting in water or rouge in alcohol. Insert the whole leaving the lingual side up and exposed. Burn out the wax and fill in with 22K gold solder.

After the short while necessary for cavity preparation and matrix burnishing, your patient may read the magazines while you sit down to finish the work, or have a later sitting for the final finish and inlay setting.

Conditions where gold inlays are specially indicated, in all cavities adjacent to bridge work where difficulties arise in adjusting the rubber, in children's teeth where gold is indicated, in the teeth of aged people, in teeth loosened by pyorrdoea, in devitalized molars and bicuspids where frail walls must be left, these walls may be supported by cement and protected by proper gold inlay. In all contour restorations where strength is necessary.

Before setting the inlay roughen the inner surfact of inlay and cavity with a wheel brush, and never use any thing but the highest grade cement.

foil or 36 G. pure gold plate; the first named being preferable. For small cavities No. 30 rolled gold foil is good.

In large cavities or contours small wire staples well arranged according to the case in hand will be necessary for perfect retention.

While the matrix is being formed locate these retainers, and drill holes through the matrix and into the tooth. Always re-

OLD THOUGHTS, IN RELATION TO PYORRHEA ALVEOLARIS.

By Dr. Max Greenbaum.

Although a conditional promise was given to the Chairman of your Executive Committee to present a paper devoted to the consideration of those various pathological conditions known under the generic name of pyorrhea alveolaris, when the time approached for preparation of the subject it occurred to me that, not only could I not say anything new of this wide class of disorders, either as to etiology, pathology or therapeutics, but most likely little interest would be aroused through a specific presentation. Such method of treatment of the subject necessarily involves restatement of much, if not all, of what has been said and written concerning pyorrhea, in a manner which is familiar to you. You, therefore, may note some modification of the original intention as stated, to the extent of herein incorporating a few thoughts on existing modes of practice in comparison to those of the past, with the view of determining what progress has been made in relation to pyorrhea, also in the hope, that, as you will hear read merely a collection of "old thoughts," the manner of treatment if not the substance, will evoke some little interest.

Age generally commands respect. This is a moral obligation prescribed by every enlightened form of belief. The analogy which here suggests itself is at once evident. Can we make the application to "old thoughts?" In many instances the affirmative of this is at once evident, and no doubt almost every one can offer an example of knowledge long since established, still commanding our respect because, apparently, it is as correct and well founded today as it was at the time of its establishment. And this is so with dental knowledge. From this, however, the deduction must not be made that any mode of practice, or any knowledge for the fulness of the argument, that can lay claim to a degree of antiquity is entitled, purely on that account, to our respect. It appears to be almost a human mandate that respect and appreciation be accorded knowledge, even though it contains but part of the truth, provided it is an offspring of the past; and the respect and appreciation seem to be proportionately enhanced, in degree as the knowledge can claim antiquity and completeness. New truths, as a rule, do not meet with ready acceptance. This is a matter of history. But as truth must persist, old methods, old ideas, old modes of practice are relegated to the past, and in their stead we find new methods, new explanations and new relations. This is progress. The old may have outlived its usefulness, or, as we sometimes find, it was erroneous and a positive hindrance to the truth. Then again, and it has not occurred infrequently, that which is presented in the name of advanced knowledge, is only so in the claim made for it and not in the substance. The statements are clothed in different and perhaps more inviting phrases, but the essentials are not new, they are old. Take for instance the surgical aspect of alveolar affections.

Years ago Dr. Riggs emphasized the importance and demonstrated the efficiency of thoroughly removing all deposits from the roots of teeth afflicted with pyorrhea. This is as forceful today as he assumed it to be fifty years ago. They who idealize *progress* and only wish to be classed as *progressionists,* may argue that today these affections have a better classification, are better understood in their local and general involvement, and in consequence receive more thorough treatment. This may be true, if not essentially, perhaps in the details. And it is equally true, if we admit the facts as handed down by those familiar with Dr. Rigg's successes; his results, achieved when dentistry was in its infancy, were as satisfactory as any produced today. It matters not whether you are dealing with that class of pyorrhea the incipiency of which lies in a deposit from the oral fluids along a portion of the cervical border; that class distinguished in its primal aspect by a deposit from the blood near the apex, or that class in which a deposit is not the first manifestation of the disease, but which in most cases subsequently is marked by a deposit; all require thorough surgical treatment for a favorable outcome just as Dr. Riggs insisted upon in his treatment of these conditions so many years ago. Thorough surgery in these cases is an "old thought" and one worthy of much respect. Irrespective of any claim in advancement of knowledge of pyorrhea, in its therapeusis, thorough surgery will ever be a salient factor. Dr. Riggs realized its importance and acquired the necessary technical expertness to carry it into practical effect. How many, like him, have realized its value and acquired the ability to thoroughly remove deposits from roots? It is in no sense too severe a statement, to say that as a general form of practice, viewed in the thorough sense, it does not find application. Too frequently the operation is performed in a perfunctory manner, due not so much to inability to acquire technical proficiency, as it is to the failure to properly estimate the effect of what is now a very "old thought" in dentistry.

Passing from the surgical aspect as a curative means in pyorrhea, let us consider the medicinal. What is new in the modern medicinal treatment of pyorrhea? The use of antiseptics must be allowed, and these diseases afford conspicuous reminders of the general debt of gratitude we owe the comparatively modern science of bacteriology. Without the liberal use of antiseptics prescribed with a full knowledge of their varying capacity to do good, we do not mete out to our patients that service which they have a legitimate right to expect from us and which we ought to be able and willing to give. But has the remarkable progress which we find on all sides a like application in the production of an agent that in itself more potently exercises healing effects than any before known? In a paper presented before the New York Odontological Society last October, Dr. Good of Chicago, who devotes considerable time to the treatment of pyorrhea, much after the manner of a specialist, first referred to the treatment of these conditions as being "purely surgical," and later advocated the use of lactic acid. Dr. Good does not claim to have been the first to suggest the use of lactic acid in the treatment of pyorrhea, therefore it is no contradiction to say that this agent has been before the profession, in the same capacity, for many years. And if you will allow me to attest with my experience, no agent has given me results equal to those produced with concentrated lactic acid. Trichloracetic acid, a modern product, and one held in relation to pyorrhea in very high repute by some eminent practitioners, has not in my hands equalled the results obtained with lactic acid. It has been employed in varying strength, from five to twenty-five per cent solutions, and in some instances even in stronger solutions, in the same manner as lactic acid. It has also been applied in the same mouth wherein teeth were being treated with lactic acid. Teeth affected on one side received applications of lactic acid, those on the other side trichloracetic acid. In no instance did the latter agent act as favorably as the former. Trichloracetic acid may be a remedy of considerable value in the treatment of pyorrhea, but it does not seem likely that it will supersede or outrank the agent that from its many years of usefulness now represents an "old thought."

Concerning the question of pyorrhea, not considering here any mechanical device for prevention of the progressive loosening which results from gradual loss of alveolar walls and pericementum, we find that in the matter of local treatment the old is practically the new. Thorough surgery is the dominating factor. And in degree as we realize this and are able to carry the "old thought" into effect, so it appears likely that we will meet with favorable results. After the surgical treatment we may consider the use of such agents as lactic or trichloracetic acid, perhaps with a predisposition to favor the former. This, together with rigid antiseptic precautions, and in this category we have the hydrogen dioxide preparations, hydronapthol and the various aromatic combinations to which formalin has been added, constitutes the local treatment of pyorrhea.

Eliminating for a moment the consideration of old thoughts, we may inquire, wherein do we find the advance in knowledge of these diseases at which we hinted? A large mass of testimony has been collected by various investigators which strongly supports the present prevailing notion in the profession that pyorrhea may be divided into several classes according to the etiological determination. A few years ago Dr. Pierce quite conclusively demonstrated that gouty or rheumatic conditions exist as causative factors. From the frequent attacks of pyorrhea that have followed nervous disturbances, we must regard with apprehension any lowering of the vitality of the system. In fact exhibitions of nervous degeneracy, in its alarming frequency of occurrence in women, may in the near future take precedence as an etiological factor of pyorrhea. To be brief, many of the best thinkers in the profession today recognize a class of pyorrhea the beginning of which takes place at the gum line, owing to irritants acting in the oral cavity; a second class that has its inception near the apex, owing to a deposit of some waste material carried in the blood stream; and a third class in which the pericementum appears to suffer from faulty metabolism, leading to necrotic changes and finally presenting the other features which characterize pyorrhea, pyogenic infection and an increasing looseness of the tooth. The researches which have made this division possible, though it may be faulty, indicate the advance that has been made in the knowledge of pyorrhea.

Conservatism generally is regarded as characteristic of past conduct, in distinction to the progressiveness and radicalism so apparent of the present. It assumes a place in present considerations, because, being very markedly an attribute of past modes, it is an "old thought," and, furthermore, because it involves relations with pyorrhea. What follows may serve to make this clearer.

Bridgework as now constructed is a distinctly modern phase of dentistry. Statistics are wanting as to the number of cases of pyorrhea directly due to its adjustment. This is not stated as an arraignment against conservative bridgework, conscientiously fitted and constructed, and must not be so construed. But viewing conditions as they exist, is not the spirit of conservatism so characteristic of the past pregnant with advantages? Compare its results with those emanating from the wild impulsiveness of a vast number of modern bridgeworkers, and then ask yourselves the question whether a little of the conservatism of the early workers in dentistry, injected into the average modern bridgeworker, would not have an important bearing upon this serious question of pyorrhea.

In like manner we may approach the latest *shibboleth* of western dentistry, "extension for prevention." This is not entirely new in principle, but in the degree as now advocated. The extensive removal of tooth structure as practiced by such men as Drs. Black, Johnson and Wedelstaedt results in enormous operations, and the question naturally here arises, to what extent does this induce pyorrhea? The phrase "extension for prevention" is decidedly catchy and no doubt this aids in popularizing the principle for which it stands. But the old practice of the men, who made American dentistry synonymous with most skilful dentistry, was somewhat more conservative and just as perfect and permanent as the results obtained from the radicalism of what these gentlemen proclaim to be a new creed.

Much as we find in past methods meriting our respect and remaining vital in the face of the annihilation which the "new" generally brings about, it must not be understood that the "new" is to be decried, or treated with indifference. Progress involves new thought. You cannot have one without the other. Its influences for good, however, may be restricted, at times entirely lost, and not infrequently converted into harm, when it entirely disregards conservatism and savors of extreme radicalism. But join progress with the temperate balance which conservatism gives it and you approach the condition usually productive of best results.

A new interpretation of an "old thought" is to be applied in relation to alveolar affections. The old practice is that of cleaning the teeth. The new interpretation is that of Dr. D. D. Smith. His plan calls for the monthly treatment of teeth and gums thereby inducing a condition of oral cleanliness which cannot fail to be an important factor in the prophylaxis of pyorrhea. Cleaning the teeth is esteemed so simple a performance in dental work that beginners are put to the task. Dr. Smith's meaning is as much deeper in significance from this simple aspect, as Dr. Riggs' operation of removing "tartar" from the teeth is to the result ordinarily attained by dental practitioners. The business of the prophet now is somewhat out of date, otherwise we would venture the prophecy that if all who practice dentistry would devote themselves to the thorough comprehension of the "old thought" of thorough surgery as understood by Dr. Riggs, to the oral prophylaxis advocated by Dr. D. D. Smith, to conservatism in bridgework and gold fillings, the question of pyorrhea soon would meet satisfactory adjustment.—*Items of Interest.*

TYRANNICAL DENTAL LAW PROPOSED IN NEW JERSEY.

By Dr. Edward H. Bowne, Kingston, New Jersey

Why should New Jersey enact a "penalty law" compelling state dentists to pay an *annual* registration fee of one dollar?

Where does the legal right exist to enact such a law. If correct in principle, then why not "herd" medical men, lawyers, "hoss doctors" and so-called embalmers, all of whom now have examining boards in New Jersey, and compel them, also, to pay an annual registration fee to the respective secretaries of the state boards.

Consistency, thou art a jewel rare indeed! This Yankee country and state thereof, in passing dental and other laws goes far beyond the personal rights of American citizens.

A far less tax on tea caused the Yankee state of Massachusetts to commit a breach against the mother country (England, "Boston Tea Party") and lead to a long and bloody revolution, lasting almost eight years, and causing the death in war of thousands of men.

If a few cents tax on a pound of imported tea, had a principle behind it, then so has the state extortion of an annual dental registration fee of one dollar a fighting principle behind its forked head. Despite the decision of the United States Supreme Court sustaining the Goodyear–Cumming patents, thousands of dentists in practice at the time and interested in the matter personally, considered the decision unjust, cruel, and tyrannical, however, there were not less than three dissenting judges led by Justice Bradley of New Jersey the able jurist of the Supreme Court bench.

The prediction of the writer freely expressed at the time of the dental rubber patent litigation, that the matter would finally result in a tragedy was ultimately fully confirmed, by the tragic death of Josiah Bacon, treasurer of the Goodyear Dental Vulconite Company at the Baldwin Hotel, San Francisco, California, from a revolver shot fired by Dr. Chazant.

In the last thirty years, Jersey has had enacted directly through the state dental society, dental laws, ad infinitum—ad nauseam—some good, and many indifferently poor. New Jersey, or the officials thereof, does not recognize dental surgery in a single state appointment. There is not in the whole state, or any county, township, borough, city or town thereof, a single dental surgeon drawing a public salary for professional services. But hundreds of medical men and lawyers, and not a few "hoss doctors" and embalmers draw thousands of dollars annually as recognized officials of the state. Every city, town, township and county in the state his its physician and legal solicitor at generous salaries, but where in a single authentic instance is there a dentist appointee in the entire state of New Jersey to a position with a *state salary attached?* Not a single one. Hence we pertinently ask, "Why has Jersey the legal right to extort a registration fee *annually* of the members of the dental profession, with a penalty attached in case of default of payment thereof?"

If the proposed bill becomes a law it will be an unjust discrimination against a special class of citizens, it is therefore clearly unconstitutional, and a menace to personal liberty, tyrannical, humiliating and unjust.

Many fraudulent laws have been enacted in New Jersey within twenty-five years, and some of them, at least, could not be legally sustained in a state action before the proper tribunal.

BOOK REVIEWS.

In The Year 1800. Being the relation of sundry events occurring in the life of Dr. Jonathan Brush during that year. By Samuel Walter Kelley, M. D. Pages 421. Silk Cloth. Price $2.50. Illustrated. The third volume of the Doctor's Recreation Series. The Saalfield Publishing Co., Akron, O.

This is the third volume of the Doctor's Recreation Series and it is the best up to date.

The book is a historical novel, the events of the story being related as occurring in the year 1800. Dr. Kelley gives the story as Dr. Brush's own words so there is a quaint style to it which is very pleasing. The story opens with Dr. Brush's experiences as a young physician in the frontier village of Farmerstown in the Province of Maine. It is here that the mysterious stranger, "Mrs. Gray," appears as a patient and figures all through the story. At this time this village is new and we are given a splendid account of the people of such a primitive New England place; we are introduced to the other two doctors, the clergymen, the judge, and other provincial dignitaries, and to the tavern keeper, lumbermen, etc. We get a correct knowledge of methods of treatment used by the practitioners of 1800. It was at this time that the craze over Perkin's "tractors" was prevalent and filled about the same position as Christian Science does now. Diseases amenable to suggestion were benefited and that, like other psychic fads, was its limit. As presented in this book a most excellent idea is gained of the practice of "Perkinism." Another subject of interest is the account of the resurrection necessary at the time to obtain anatomical material. Jenner's discovery of vaccination had just been announced and the discussions of it by medical men of the day are most interesting.

The scene of the story changes when Dr. Brush removes to Philadelphia for further study and to practice. Philadelphia in 1800 was the metropolis of the New World, with its population of one hundred and twenty thousand and it had the greatest medical college this side of the Atlantic. Dr. Brush was promptly appointed demonstrator of anatomy at the college because of his superior ability and his description of affairs at the college is good. Dr. Benjamin Rush was professor of practice of medicine, and Dr. Physick professor of surgery and we get a fine glimpse of these fathers of American practice. Of great interest is the account of Dr. Physick's surgical clinic where the operations were performed without anesthetics or antiseptics.

Anatomy: A Manual for Students and Practitioners. By Henry E. Hale, A. M., M. D. Edited by V. C. Pederson, A. M., M. D. Philadelphia and New York; Lea Bros. & Co.

This book presents in a clear concise manner the essentials of general anatomy. It consists of some 389 pages and is divided into six parts covering Osteology, Arthrology, Myology, Angeiology, Neurology and Splanchnology.

It should prove to be a very valuable text-book for dental students as well as a reference work for practitioners.

A SUBSTITUTOR CONVICTED.

Kress & Owen vs. Cruttenden.—On the 8th day of December, Police Magestrate Denison, in the Police Court, registered a conviction against Thos. Cruttenden, Jr., who keeps two drug stores in Toronto, one at the corner of Howard and Sherbourne Streets, and the other at the corner of Gerrard and Sumach Streets, for infringement of the trade mark, duly registered in Canada, owned by Kress & Owen Company, 210 Fulton St., New York, "Glyco-Thymoline." The evidence conclusively showed that the defendant had put up a preparation under the name of "Glyco-Thymol," in bottles almost identical to those of Kress & Owen Co., and with labels worded verbatim et literatim to those of the original manufacturers. The magestrate, in registering the conviction, gave the defendant's solicitor, who hinted at an appeal, to understand that if he entertained that idea he would not only fine but imprison his client as the law provided. The case was adjourned for a week, at the end of which time Cruttenden, through his solicitors, gave an understanding that he would stop all manufacture of Glyco-Thymol and destroy all labels, bottles, etc., connected with the sale of that preparation. The firm of Kress & Owen Co. are deserving of congratulation over the result of this case. They had every reason for prosecuting Cruttenden, as it was nothing short of dishonest, and entirely contrary to the law that he should stoop to such practices and try to rob a firm who, by strictly ethical advertising (solely to the profession) and the expenditure of about $175,000 per annum, have secured a large sale of Glyco-Thymoline, a preparation found valuable in catarrhal conditions of the mucus membrane.—*Canadian Journal of Medicine and Surgery Editorial, January, 1905.*

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EDITOR:
WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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EDITORIAL.

In an editorial in the last issue it was stated that a report made by the secretary of the Sanitol Stockholders Protective Association would appear in this issue. This report is not yet quite ready for publication but it will probably appear next month.

There are two sides to every question and to the end that we may not be accused of partiality or injustice we publish herewith the essential parts of a letter received recently from a St. Louis champion of the company.

"On the part paid plan of issuing stock, a shareholder waives the right to vote that stock until it becomes fully paid. 'The holder of this certificate waives the voting right until such time as he shall be entitled to have the full paid certificate issued.' Copied from my certificate. By a law of corporations in Missouri, every share of stock issued by a company on certificate has to be voted at stockholders' meetings. See Laws of Mo. Corp.—Sec. VI. This stock of dentists therefore who have paid part only, is voted for them, by their consent, by the president of the company.

The stockholders' vote you mention

H. C. G. Luyties	15,000
F. August Luyties	4,950
F. J. Rein	50
	20,000

was a vote taken many years ago when the company was capitalized for only $200,000. At that time stock held by dentists was about all part paid, he voting it, as by law compelled to do. The balance of his vote was composed of his own small holdings of stock, together with proxies made over to him by full paid stockholders who could not be present. In the report of the meeting of course the vote stands 15,000 shares represented by the president.

Again—all stock sold has gone into the development of the business. No business can be built up without such aid, the only difference is that Mr. Luyties' philanthropic plan of cooperation made the dentists partners giving them the benefit of profit instead of any St. Louis bank who stood ready at any time to take the whole amount. Your statements regarding formulae and trade marks are false."

The writer of the letter also says of Dr. Kelley of Boston, (the secretary of the Stockholders Protective Association and who attended the stockholders meeting last December) "Let me tell you something about this gentleman. I met him last December when he was in St. Louis. My judgment is that he is animated in his attacks by one of the Sanitol competitiors, who pay his expenses."

The letter also asks why we do not go to the company with questions instead of Dr. Kelley.

The writer of this letter signs himself H. H. Gibson, 3651 W. Pine Blvd., St. Louis.

The signature is very much like that of Hamilton Gibson, and inquiry elicited the information that a Mr. Gibson lives at this address who is connected with the Sanitol Co.

The point at issue in regard to the stockholders' vote mentioned above was whether the stock voted by Mr. Luyties was owned by him and sold to dentists, or whether it was treasury stock of the company and merely voted by him.

Mr. Gibson states it is the latter, while the Stockholders Protective Association maintain the former to be the case.

The next statement in the letter is that the money from all stock sold has gone into the development of the business.

It should be remembered in this connection that up to the present time $785,000 worth of stock has been sold, presumably at par.

His next reference is to Dr. Kelley's motives. Dr. Kelley represented an organization of some four hundred stockholders at the meeting and his expenses were paid by them.

We will take advantage of the invitation in the letter and ask the company the following questions:

Did not the company purchase from H. C. G. Luyties the formulae and trade marks on Sanitol tooth powder, paste and brush for $300,000?

Did it not also purchase from the same gentleman the formulae and trade mark on a toilet powder, face cream, bath powder, and shaving foam for $200,000 more, both payable in stock?

Was not stock to the amount of $500,000 issued to him in payment for this?

Is it not a fact that the dividends have decreased from 12% in 1901 to 6% in 1904?

We shall be glad to give space to the answer to these quesitons should we be favored with a reply.

We are also in receipt of another letter, this one from Albert Arnstein, the attorney of the Sanitol Co., who writes us as follows: "My client's attention has been called to an article reflecting on the management and affairs of Sanitol Chemical Laboratory Co., contained in the February, 1905, issue of your journal. The article also indicates that further publications are to be made reflecting upon, and criticising the affairs of this company.

"This is to advise you that you will be held personally accountable for anything that you may have published or hereafter will publish reflecting upon the integrity of the Sanitol Chemical Laboratory Co. and its officers, and of the management by it and them of its affairs."

THE BRITISH DENTAL ASSOCIATION AND THE NATIONAL DENTAL ASSOCIATION OF THE UNITED STATES CONTRASTED.

By William H. Trueman, D. D. S., Philadelphia.

The *Dental Record* (London) for July, 1902, contains a report, covering some nineteen pages, of the last meeting of the British Dental Association, at Shrewsbury May 22 to 24, 1902. While it is a mere *résumé,* it is interesting and in regard to some matters invites careful thought. In the first place, we are informed that the Association has twelve hundred and five members, that during the past year eight only have resigned, and thirteen names have been dropped for non-payment of dues. This is a remarkable showing. It demonstrates the keen interest the dental profession of Great Britain takes in its National Association, and their loyalty. The loss of only thirteen from non-payment of dues for two or more years out of membership of twelve hundred and five is a record of which but few dental societies can boast.

Now, why is it that in England so large a proportion of qualified dentists are members of the National Association, while in the United States the National Association is so poorly supported, and numbers so few? If our national society was in practice, as it is in theory, a representative body, the disparity would be seeming only. It is not so; its complex arrangement of permanent members and delegates makes the provision limiting representation of affiliating organizations practically null; for the so-called election of delegates that is annually gone through with by the bodies recognized by the National Association soon gives each one an opportunity, so that, nothwithstanding the rule, every member of a local society may be a member of the National if he so choose. Only about one in fifty legal practitioners in the United States avail themselves of this wide-open door, while in England the proportion is about one in five or six. Geographical conditions may explain this in part, but is it a full answer?

There is another matter. In the report referred to we are informed that the British Dental Association has an invested fund of two thousand pounds (about nine thousand six hundred dollars); to this three hundred pounds are to be added; in addition to which it has two hundred pounds in its banker's hands. In addition and apart from this fund it maintains a benevolent fund,[1] with a large and constantly increasing sum at interest, notwithstanding that its trustees from its yearly income are contributing to the support of disabled members of the profession, their widows and children. Quietly that benevolent fund has done and is still doing a world of good. It has made comfortable the last years of worthy but unfortunate practitioners, regardless of whether they are members of the Association or not; it has stepped in a the right time, and in the right way, to assist the widows of those who have fallen by the wayside, and has cared for and educated their children.

In addition to all this, the British Dental Association has for ars published a monthly dental journal all its own, abso- ly free from trade entanglements of any kind or character. its beginning this journal, as a dental journal, did not amount to much; it was a serious expense; while each year the deficiency became less, it continued for many years a heavy drain upon the finances of the Association to make good the difference between the income and the expenses of the journal. The time came, however, when they balanced; when the *Journal* began to be a source of profit; then it expanded, took on a new character; and today it is the peer of any dental journal in the world. In the meantime it had been a bond of union between the local societies and the national body, contributing to the success of each. In the beginning it was little more than a medium for announcing dental society business, but as such was useful to those who desired to keep in close touch with that phase of professional progress. It still is the recognized official organ of the dental profession in Great Britain, and still retains its usefulness of keeping in close touch the local and national associations by being the medium through which their various announcements are made to the profession, and through which much of their proceedings are published; but in addition to this, in its present form it monthly publishes a large amount of valuable original matter and a judicious selection of translations from foreign dental journals which otherwise would be unknown to English readers. Its large circulation has secured an extensive and varied advertising patronage, adding not only to the profits of its publication, but also to its value as a professional journal.

Its monthly visits are a constant reminder of the existence and usefulness of the British Dental Association, and keeps its readers, whether members or not, well informed of all its doings, financial and otherwise; it takes them into its confidence and invites their interest; as a result, the Association has some twelve hundred members, about half of whom annually attend its meetings.

In contrast to this, our National Association has no official organ, but trades its proceedings to whoever makes the best bid. The successful journal selects such of its proceedings as suits its purpose, and dribbles them out month by month, as suits its convenience. Its proceedings in full are for its members only, and are as inaccessible to outsiders as are the secrets of a Masonic lodge; not a volume can be obtained for love or money. It has no interest in, nor does it in any wise assist, the local societies, nor does it do anything more for the profession at large than do many state and local societies. None outside the circulation of the favored journal are reminded of its existence from one year's end to the other. As a natural result, out of the twenty or twenty-five thousand legal practitioners in the United States, a beggardly few hundred only are members, or take in it the slightest interest. It offers no inducement whatever to those unable to attend its meetings to add to its funds or influence by becoming members.—*International.*

THE EVILS OF MOUTH BREATHING.

By Bessie B. Bennett, D. D. S., Baltimore, Md.

From every state of our union—from every country of the civilized world—comes the cry to be delivered from the "great white plague"—that terrible scourge tuberculosis, which claims as its victims each year an alarming per cent of our population.

It seems to me, that we, as dental practitioners, have as our great privilege and responsibility the means of helping to decrease the ravages of this disease, by merely teaching our patients those of course of tender years being the principal subjects, *how* to breathe.

It was my fortune (although at the time I had not yet reached woman's estate, and could not appreciate fully the benefits to be derived from such a connection), to assist at the opening of the first Hospital for Consumptives in the state of Maryland, my mother being its founder and first president.

Having been always interested in the study of tuberculosis, my observations *since* my work at the institution, and recollections of the patients *there* (speaking specially of those suffering from ptisis), impress upon me forcibly that ptisical patients as a rule present the open mouth, drawn nostrils, and the general facial appearance of a mouth breather.

Follow me in my deduction:

A child, or maybe an older subject, from some cause or other, generally acceded to be adenoids, becomes a mouth breather. The Depressor Alae Nasi muscle becoming tense from the mouth being constantly open contracts the nostrils. From lack of exercise the bony structures as well as the soft tissues of the nose deteriorate, lessening in bulk, and the natural passage for the air becomes so changed in character that even though both the *cause* and *act* of mouth breathing be done away with, the natural channel must be specially exercised before conditions ecome normal. So little, if any, air passes through the nose the mouth breather, and passing as it does through the open mouth, the lungs receive it unwarmed and unfiltered, exactly the opposite of that passing through the natural tract—the nasal passages.

The mouth itself from the action of the muscle becomes wider in the direction from the roof to the floor than from alveolar border to alveolar border, which latter should be the proper conditions.

The pharynx, by reason of the contraction of the constricta muscles, which you can prove by opening your own mouth and placing your fingers over these muscles, becomes smaller, so that the air impure though it be, is lessened also in *quantity*, so that the lungs being supplied a *small* quantity of an *inferior* article, lack the means for their proper exercise, and they too become lessened in size and power to properly oxidize the blood passing through them for purification; the chest becomes contracted, and the face of the individual—added to the common drawn appearance of the mouth breather—also exhibits the peculiar complexion due to hypo oxidation, and altogether the lungs are defenceless against the bacillus tuberculosis should it lodge there.

This, then, to me seems a sufficient proof that mouth breathing *is* without doubt a frequent cause of or stands in causative influence *to* ptisis, so if we who are the most likely to discover this perversion of the act of breathing, by a little trouble on our part, also putting the patient in charge of the family physician, or a clinologist, can alleviate this evil in the name of humanity let us do it.

This mouth breathing is the more dangerous because it comes as a thief in the night, not with a blare of trumpets, but softly—creeping along insidiously just as natural breathing becomes difficult, entirely without volition on the part of the individual.

Another painful side-issue that is painful in as much as it causes much discomfort to the patient, is deafness—accounted for probably by the constant tension of the pharyngeal muscles, narrowing or entirely closing the opening of the Eustachian tube, thus shutting off the supply of air to the inner ear.

Now to follow the evil effects of mouth breathing on or *in* the mouth itself.

As I said before the muscles of the cheeks being continually in a state of tension from the open condition of the mouth, the ordinary space within the mouth becomes smaller. The palate bones of the superior maxillary, and the palate processes of the palate bones are crowded upwards (encroaching on the nasal tract), and the palate arch becomes high and pointed so that instead of presenting a line of beauty it assumes almost the form of an acute angle. The dental organs failing to find room in their wonted positions follow the course of least resistance and are pressed forward by the action of the Buccinator muscles, the result being a set of lapped and irregular teeth, which is a nightmare to the orthodontist—a student of the face beautiful.

This crowded and irregular condition results not only in disfiguring the face and affecting the speech, but also has its effect on nutrition from imperfect mastication owing to the lack of occlusion between the irregular upper and lower arches, thus preventing the food from being thoroughly comminuted.

Decay also is superinduced by mouth breathing, owing not only to the rigid condition of the Buccinator muscles, which prevents that play of the muscles over the teeth which is such a cleansing and exercising agent, but also to the lapped and unusual positions the teeth assume, which prevents the proper use of the tooth brush, and causes the lodgment of food and the oral secretions, followed by fermentation and decay.

Thus in a few words are summed up the evils of a practice which by some parents is regarded more as a habit than a symptom of trouble elsewhere, a danger signal, as it were, flung out by Nature to warn the observer that her rules are being digressed, and from the simple decay to the horrible disease tuberculosis we can trace the results of what we are wont to term "mouth-breathing."

DISEASES OF CHILDREN'S TEETH AND TREATMENT.

BY W. C. GILLESPIE, D. D. S., OF NASHVILLE, TENN.

Read at regular meeting of Nashville Academy of Medicine, Nov. 8, 1904.

The essayist has taken liberty to depart somewhat from strict adherence to the subject assigned by the Essay Committee, and will expand the latitude of the essay beyond what would be the limits of a discussion of the diseases to which the *teeth* of children are subject.

The teeth themselves are subject to few changes, and a de- l of operative procedure in restoring them to the performance of their functions would be of far less interest to physicians than to dentists.

The subject will be treated in the relation of dental pathology to that of pathological manifestations of contiguous and remote tissues and organs; and the term, "children's teeth" will be made to embrace not only the deciduous and temporary teeth, but apply to permanent teeth also, up to the age of nineteen or twenty. This paper will also take the form of an introductory chapter to a series to follow at various intervals, provided the Academy does not procure an injunction to prevent it.

The essayist is bold enough to take this step, not because of any feeling of peculiar fitness for such a task, nor from overweening confidence in his ability to intelligently present the case, but because of the conviction that *some* one should do more than is being done.

The development of dental science has been in an inverse order since its earliest inception in the ages of the remote past. Its progress has been the counterpart of beginning with the roof to build a house, and constructing the foundation last.

The first operations were the extraction of teeth to relieve pain, instead of preserving teeth to prevent pain. These teeth, through utter neglect, had become the source of intolerable discomfort. Later, in addition to relieving by extraction, an effort was made to save such teeth as had not been rendered totally beyond redemption by the ravages of decay. Next comes the substitution of artificial dentures to replace lost dental organs.

In all these instances the patient had reached a more or less mature age before seeking the dentist, and the teeth operated upon present a very considerable degree of carious disintegration, with accompanying pathological conditions of the dental pulp and adjacent soft tissues, often exciting serious complications in more remote organs. No attempt was made to *prevent* caries at the time it can most effectually be done—in childhood and early youth. Little attention was given to children's teeth until the ravages of caries produced severe pain and necessitated immediate action to obtain relief. Little or no effort whatever was made to prevent pathological conditions arising, the entire object sought being restoration *after* the injury had been accomplished. *Prevention* came only as an after thought, inspired by viewing the wrecked and ruined condition of a being God Almighty had fashioned of teeth to last throughout life, while only a *single* set of other organs were supplied to last the same length of time. Only of late years has a really intelligent effort been made to treat diseases of children's teeth, and as a general practice it yet falls woefully short of duty. And thus, while the superstructure of our professional achievement has reached a high degree of perfection, we are just beginning on the foundation.

In thus indicting my profession, I do not the less excuse the medical practitioner and the parents of the children, for their conduct has been equally reprehensible. Dentist, physician, and parent are guilty of sins of omission, from which the human race will reap suffering and unhappiness for generations yet to come, and the snaggle-toothed and toothless will stalk abroad in the universe, and in the dead hours of the night the wail of the child with toothache will be heard in the land, as well "as the voice of the turtle."

Of the three responsible parties named, if one is to be censured more than another, it is the physician. The parent is guilty with mitigating circumstances. The parents grow up in ignorance themselves, and but few learn afterward until too late. The dentist rarely sees the child professionally until nothing but the root of the tooth is left, and that badly abscessed. Unless the child is enduring actual pain, the parent rarely seeks the dentist for preservation of the child's teeth, and when urged by the dentist to have this done, it is more often than otherwise regarded as merely a "speil" for more business.

The physician bears a different relation to the family from that of the dentist. The physician is called in to guide the tiny, helpless youngster along the narrow path that brings him out upon the strange, new world—the stage upon which he becomes an actor in the "Tragedy of Life," and the proud father and the grateful mother look upon that physician ever afterward as a kind of god-father to their child. The physician himself "points with pride" to the fact that he officiated at that eventful time, when in after years the poor, little, helpless mite who involuntarily caused all that commotion that night, and who lived despite neglect and misguided affection, has climbed high upon the ladder of Fame. The physician has charge of the child from birth and is called to attend him whenever the ills to which he is heir befall him. Through the dangers that often accompany teething, the physician is constantly consulted. After first dentition is complete, the child is frequently seen by the physician and though the physician feels that he is conscientiously performing his duty toward the child as regards his general health, decay of the teeth is allowed to go on until acute suffering necessitates the services of the dentist. So, while carefully watching the child's liver, kidneys, brain, and general nervous system, the physician goes along heedlessly permitting to take place a condition of the dental organs which may eventually put all those organs out of business. It is a strange thing to a dentist that a physician can look into a patient's mouth and never see anything but the tongue. In the Scriptures we read of "an eye single to the glory of God," and among medical practitioners we find an analogy in "An eye single to the tongue."

Nor are physicians less observant of dental organs of the children they are called upon to treat, than of older patients. Many reputable, competent physicians, who are skilled in diagnosis and practical application of the science of their profession, have patients under constant observation for extended periods, and the whole time overlook a most deplorable condition of the teeth and gums, from which may be a constant flow of pus which, with imperfect mastication and insalivation of food, must necessarily impede the progress of cure of *any* pathological condition for which the patient is undergoing treatment. Hence it is as imperative that the physician become interested in the preservation of children's teeth, as it is for the dentist, and an earnest study should be made by both physician and dentist of the extensive role played by dental irritation in the manifestations of pathology of remote organs and tissues.

The essayist will not attempt to outline any treatment for such pathology, for that they are more capable of handling than he, but will call your attention to the influence of dental irritation on various organs.

The first disturbance is observed when first dentition begins. This usually is about the fifth to seventh month after birth and extends to the twenty-seventh of thirtieth, when dentition or eruption is complete. A normal child, properly fed and cared for prior to and during dentition, will pass through that period of its existence with slight local and systematic disturbance. Teething is not of itself a dangerous process, though the rate of mortality is high during that period. The lack of uniform development of the child at that age renders it exceedingly susceptible to nervous impressions, and any pathological condition existing in any organ of the body must be greatly aggravated by difficult dentition and alarming symptoms become manifest. The preponderance of the nervous system in infancy renders it possible that a slight functional disorder will produce a profound impression upon some remote organ. That this is especially true of the dental organs is attributable to the fact that the teeth are supplied by branches of the fifth pair, or trifacial nerves, which are the largest of the cranial nerves, and the function and distribution of the trifacial is so complex that a slight irritation is capable of producing extensive results. At first, only slight symptoms may be present, and if the general systemic candition is good, that will be the extent of it, but if any pathology or functional disturbance exists, the additional dental irritation may be sufficient to produce alarming and even fatal results.

When the eruption or elongation of a tooth is not proportional to the rate of absorption of superimposed tissues, great nervous disturbance may arise, paralysis and death not being without the range of possibilities. This is due to the pressure of the root ends upon the branch given off by the branches of the maxillary division of the fifth pair supplying the teeth, and the irritation being readily transmitted to the brain centers. Premature eruption of teeth gives rise to more excitation and inflammatory conditions than delayed eruptions, because the older the child the nearer uniformity of developmental equilibrium, and premature eruption is itself a manifestation of nervous disturbance or undue irritation of some nature. Difficult dentition is always accompanied by intestional disorders, convulsions are frequent, the child nervous and excitable, and an increased susceptibility to all infantile disorders is present.

Passing now to a later stage of child life, we will take up the decay of the temporary teeth. This is looked upon by parents and many physicians as a matter of small importance, usually dismissed with the remark: "O well, it doesn't matter much, they have to be lost anyway." No greater sin against the child could thus thoughtlessly be committed.

It is just as essential for those teeth to remain in position in the arch until the proper time for removal as it is for them to be placed there by nature in the beginning; and it is just as important that they should be kept in condition to fully perform their normal function of mastication and developmental guides. The child's health and growth depend primarily upon perfect digestion and nutrition. To render this possible, nature provides the child with a suitable set of teeth which conform in size and shape to the dimensions of the maxillary bones and to the function these teeth have to perform. Under normal conditions these teeth are developed and erupted in the order and number best suited to the child's requirements. As the digestive organs become capable of performing their function, the diet should be regulated accordingly and more solid foods given with due regard for the upbuilding of the tissues. Such food-stuffs need mastication and insalivation to properly prepare them for digestion.

No matter how well the digestive organs are prepared for their work, unless the bolus of food is masticated and insalivated, just that far will digestion be imperfect. For a brief time they may rise equal to the emergency, but soon or late the strain of over-exertion must prove disastrous. You understand well enough the evils of imperfect digestion to render unnecessary special comment upon that, and the object in stating to you facts understood equally as well, is but to emphasize *that* phase of the importance of saving the temporary teeth.

Another point bearing upon the correction of decay of the temporary teeth is the proneness of children to form habits in early life that last through a life time. When the child has a sensitive or abscessed tooth, or sharp jagged edges of cavities or roots, violent paroxysms of pain are often caused during mastication. The child soon learns that by bolting the food in chunks, hunger may be appeased, and pain avoided. The habit early formed as a necessary expedient becomes fixed and in due time a "Rockefeller" stomach is developed on ordinary diet. That this habit of bolting food can be and *is* formed, is an indisputable fact, and it induces a large per cent of the digestive disorders that become a menace to the life and happiness of the victim, and renders more or less futile treatment for cure of conditions independently developed.

As an illustration of the effect of this forming of habit in early life, from a necessity to avoid pain, a case is cited within the personal knowledge of the essayist of a boy eight or ten years of age who became the possessor of a stone-bruise on his heel, and even after he reached manhood continued to limp and walk on the ball of his foot through habit thus formed.

Imperfect digestion in turn stimulates the attack and progress of caries. This is done through acid reaction of oral fluids, and thus we see a circle completed, caries being a factor producing derangement of digestion and being itself produced by it.

Another phase of the question of necessity for eradicating decay of temporary teeth is that upon their preservation depends uniformity of development of the maxillary bones, and this necessarily influences the development of all the facial bones. Going a step further it might not be beyond the range of possibilities, that even the character of the child may directly be influenced. Lack of development of the maxillary gives a weakened expression to the individual—a retreating chin, a weak mouth, improperly developed malar bones, "dish face," etc., which may play an important part in shaping the course of the individual's life through impressions created upon those with whom he comes in contact. This of course would not follow as the inevitable result of premature loss of temporary teeth, but such loss will surely bring about some degree of these baneful results.

This much, however, may be said with certainty: Through premature loss of the temporary teeth, modifications of normal developmental processes of the facial bones will take place that may amount to anything from a slight irregularity of the features to the wreck and ruin of the victim's health and happiness.

With the arrest of the development of each bone or organ comes impairment of function, with relative loss to the entire system; its increased susceptibility to pathological change, and the influence exerted by such arrested development in modifying perfect development of other structures.

With arrested development of the superior maxillary bones comes malformations of articular bones, which gives rise to conditions producing obstruction to nasal passages, and deafness mechanically as well as through pathological growth. These malformations cannot exist without at least an increased susceptibility to disease, even though such disease does not develop. Arrested development of the maxillary bones induces irregularity of position of permanent teeth in the dental arch. Again, we find the circle completed, and decay produced in permanent teeth by favorable conditions arising from such irregularity.

Irregularity of teeth produces mal-occlusion, and this in turn modifies normal development of the maxillary bones and aggravates any congenital malformation, and we have more or less serious pathology again excited.

So far the essay has touched only indirectly on inflammatory conditions from carious teeth, and the communication of such inflammation of contiguous tissues to more remote tissues, but that must be left for a later essay. The import of this essay is, that it be introductory and call more especial attention to the importance of *saving* children's teeth, and to more thoroughly impress upon the physician the necessity for his co-operation with the dentist in this all important work.

ARSENICAL POISONING.

By G. S. Martin, D. D. S., Toronto Junction.

(Read before the Toronto Dental Society.)

I presume the Programme Committee, in assigning this subject, had in mind not the poisoning of pulps under fillings made of oxyphosphate of zinc, by the arsenic said to be found in most samples of zinc oxide, but to the destructive action of arsenious acid on soft tissues and alveolar process, when by any means it is allowed to leak from the cavity in which it has been inserted. Permit me to sav in passing, however, that I believe that where pulps die under "cement" fillings, it is due to the irritating action of the phosphoric acid rather than to the arsenic, which may or may not exist in the powder.

With regard to the more serious question of arsenical poisoning due to the escape of devitalizing agents from cavity, the aphorism, "an ounce of prevention is worth a pound of cure," is most *a propos*. "An ounce of prevention is worth a wagonload of cure" is better. In making an application to devitalize a pulp, where the cavity is approximal, too much care cannot be exercised.

One of the most common mistakes made is placing in the cavity an unnecessary large quantity of the agent. With a pure drug and good access, the smallest particle possible to pick up and see is sufficient, if placed on the exact spot. It is good practice to place upon the gum tissue in the interproximal space a pellet of cotton dipped in chloro-percha; then, after placing the devitalizing agent in position, cover with another pellet also dipped in chloro-percha. This serves a double purpose: the chloroform acting as an obtundent, and the chloro-percha rendering the dressing practically impervious to moisture.

I read in a recent journal a recommendation of temporary stopping as a dressing over arsenical paste. I do not think anything is worse for the purpose than temporary stopping. It would be better to use dry cotton. Many depend on carbolic acid as a preventive of mischief, applying this agent to the gum in the interproximal space, and using it as a vehicle to moisten the treatment intended to carry the arsenious acid, on the theory that the arsenious acid will not pass the deadline produced by the caustic properties of the carbolic acid on the soft tissues. The material used as a temporary filling should be easy of application, so that no pressure may be the result, as most of the pain in devitalizing is undoubtedly due to pressure. In shallow, saucer-shaped cavities, such as in lateral incisors, where it may not for some reason be thought advisable to use the cocaine-pressure method of devitalizing, the arsenious acid it should be confined by means of oxyphosphate of zinc cement. After the dam is applied to the tooth, and cavity dried, the oxyphosphate in a sticky condition should be carefully flowed over the devitalizing agent, and the dam retained until the filling is hard.

In this connection I wish to relate a personal experience from my own practice, some seven years ago. Wishing to devitalize the pulp in a superior lateral incisor, having a very shallow saucer-shaped cavity, for a young married woman, I applied the dam, and very carefully applied the agent, flowing over it sticky oxyphosphate of zinc cement. The patient was directed to return in twenty-four hours, but remained away seventy-two hours instead. On presenting, she complained of great tenderness of tooth and gums, and to my consternation I found the characteristic dark angry purple condition of gum extending from apex of root to cervical margin, the most marked at apex. I at once began vigorous treatment. The affected gum tissue was freely scarified and syringed with hot water and peroxide of hydrogen, then applications of tincture of iodine were made, followed by trichloracetic acid. In spite of every effort, there speedily came a day when the patient removed the tooth with finger and thumb and brought it to me in her purse. We had "a bad quarter of an hour." She went to a city dentist who never belonged to a dental society. He told her he was a specialist in such troubles, and that I never did know much anyhow. So "she never came back." It is my fixed belief to this day that the devitalizing agent passed out through the apical opening, as sloughing was most marked at apex, and the apical opening in tooth was noticed to be abnormally large. I may have erred in placing too much of the drug in the cavity, but I particularly remember the great care taken to seal cavity, and filling was still intact when patient returned.

Since then I have probably never applied arsenious acid or cobalt for the purpose of devitalizing a pulp without the memory of that unfortunate accident making me take a little extra care, and during the last seven years nothing of the kind has ever occurred in my practice.

Of course I know a fellow isn't supposed to tell such things "in meetin'," but as the small boy said in his essay on "Pins," "Pins have saved a great many lives by people not swallowing 'em," and if I can save any one present from trouble by relating this incident, I don't mind the pain of the confession. One advantage possessed by cobalt over arsenious acid is that you can always see it, and are surer of getting it properly placed in cavity before covering. There is a mistaken idea in the minds of some operators that cobalt is less dangerous than arsenious acid. Keep your eye on it. It will fool you if you don't.

Some time ago a young lady presented herself at the office for teratment. She had been under the care of a city dentist who had made an application of cobalt to a cavity in second superior bicuspid. It was covered with cotton and sandarac varnish, and an appointment made for the second day following. The patient was not warned of the necessity of returning not later than the appointed time. The illness of her mother caused her to forget the return visit, and the patient came to me in *three weeks* with the treatment still in place, and a very serious state of affairs present. After removing treatment the affected soft tissues were cut and scraped away, using plenty of hot water and listerine. After a few days the process between the bicuspids loosened, and was removed. The cavity was dressed with aromatic sulphuric acid, then with listerine, and the bicuspids saved, although with quite a depression between. Aften ten years of service, the devitalized tooth came to me this last month, with an abscess, which so far seems to resist all treatment.

In these two cases, the most serious I have seen, I have outlined in brief my methods of treatment.

ROOT FILLING.

By M. F. Cross, D. D. S., Oshawa, Ont.

The essential characteristics of an ideal material for root filling should be: (1) the perfect closure of the apex of canal; (2) it must be insoluble; (3) it must not absorb the fluids of surrounding tissues; (4) it must be non-irritant, should it be forced through the apex of root. In my earlier practice I used oxyphosphate of zinc, then got to using pheno-banum (quick cure) with most encouraging results, and had thought I had discovered a material that filled all the above requirements. After employing it in a most careful manner in the filling of the roots of a lower molar of a prominent physician of the town, both patient and I were much elated, for a few days, over the result of the operation, when, much to my chagrin and the patient's disgust pericemental trouble occurred, resulting in the removal of the tooth as a "quick cure." Paraffin I also used as in the same manner as quick cure, working it up the root with a warm wire or forcing up with pressure of soft vulcanite or syringe. I always disinfect roots by using a hot wire to steam or volatilize the medicinal agent placed in the root for that purpose. It matters little with what material the root is filled so long as the apical foramen is thoroughly and comfortably sealed, and gutta-percha points, as I am using them now, do that as effectively as any other material at our command. After thoroughly removing the pulp by means of the pulp extractor, I clean out and enlarge all roots with root canal broaches of different sizes, for no matter how pliable any root drill, there are very many cases where we cannot drill to the apex, viz., in distal canals of upper molars and mesial canals of lower molars, to say nothing of the torturous canals found in third molars. By first using a fine broach as a draw file and then a larger one, any canal can be enlarged to the size required. I have here to show you many cases of perforation of the root caused by using a drill in a crooked canal. Such teeth could not possibly be opened up to the apex by means of a drill. however flexible. I first take a gutta-percha point as small as the particular case requires—if I have none fine enough I warm and draw one fine, cut it very short with a suitable fine root plugger carry the point and force it into place at end of canal after such end of canal has been slightly moistened with eucalyptol, which is a solvent of gutta-percha. Piece by piece is used, until the smaller part of the root is filled, when larger pieces may be used to finish the canal filling. Never use one long point, as we buy them, in starting, as by such means you are unlikely to get canal thoroughly filled.—*Dominion.*

CONTOUR AMALGAM FILLINGS.

By J. M. Magee, D. D. S., St. John, N. B.

Natural teeth were set in a plaster cast, with pieces of rubber tubing slipped over the roots (before running the plaster), to admit of their moving slightly, so that when the fillings were inserted the contact and correct contours would be as readily illustrated as in the mouth. Three cavities were filled, one being contoured to meet a sound proximating surface of the contiguous molar, the other two being proximo-occlusal cavities in a lower bicuspid and the adjacent molar. The cavities having been prepared, especial care being given to that part which been prepared, a matrix cut from very thin sheet steel was fitted to each tooth, especial care being given to that part which embraced the cervical portion. Filling the bicuspid cavity first, the matrix was slipped down between the rubber tubing, which represented gum tissue, and the tooth, and a small piece of softened base-plate gutta-percha was tucked into the interproximal space holding the matrix snugly against the neck of the tooth. Its upper side was held off distally far enough to ensure a generous fulness. To support it in place, gutta-percha was softened and pressed into the cavity in the molar, and other pieces laid against the sides of the matrix and pressed gently, while soft, with thé thumb and finger, causing it to spread not only over the matrix, but into the triangles and against the adjoining tooth. When cold, and given additional support by the thumb and finger, as much presure as was necessary for perfect consolidation of the amalgam, which was then inserted was made without displacing the matrix. The gutta-percha was then removed, and the now loose matrix taken away, and the amalgam was carved to the shape of a correct restoration.

The other matrices were supported in the same way—a small piece tucked into the interproximal space to hold the matrix against the neck of the tooth, while the upper side was held in contact with the adjacent tooth—then larger pieces placed at the sides and gently pressed with thumb and finger. The bicuspid being now contoured, a matrix was next stayed [illegible] molar, and amalgam packed into it in turn. When full, the ends of the matrix were straightened out, one end grasped with pliers, and it was pulled out sideways, leaving a nice V-shaped space and good contact. This filling was then carved for contour and occlusion. The remaining cavity was then filled, following the same procedure. The matrices were all made to extend a little higher than the filling would be when finished, to allow for carving, and to ensure a perfect occlusion.

THE NECESSITY FOR USING MORE INTELLIGENCE IN TREATING DISEASED CONDITIONS OF THE PULP.

Read Before the Northern Iowa Dental Society.

BY A. C. SEARL, D. D. S., OWATONNA, MINN.

Permit me to open my remarks by saying that only a few complications of the pulp can be dealt with in this paper. To attempt to interest you in the different diseased condition of the peridental membrane would mean that I should have to take the lectures on Special Pathology and read them all to you. We are not here for that purpose, but rather to get the most good out of a discussion of the remarks I shall make in considering a few of the diseased conditions of the pulp with which we deal.

For the past ten years our attention has been called repeatedly to the necessity for using more intelligence when treating these diseased conditions. Notwithstanding all that has been written, all that has been said and the importance of this subject, the great majority of the men in our profession are still following the obsolete methods. The time has come and is right now, when I, for one, protest against this manner of not using the rubber dam in any and every case where it can be applied, against this matter of using cotton and sandarac varnish as a temporary filling and I protest and that still more strongly regarding this matter of not making use of the knowledge which has been developed for us when dealing with the different complications of the pulp that we are called on to treat. I speak thus strongly regarding this matter for a number of reasons. First, I know from a bitter experience what fearful results have followed and are likely to follow where the greatest attention is not given this subject. I do not only believe, but I know precisely what I am saying to you. Second, I wish, if possible, to interest you in this matter so that greater good can be rendered those whom we serve. And, last of all, let me ask you and let each and every man within the hearing of my voice ask himself, Is it my duty to give the best that lies in my power to those who consult me? Do not these patients come to us expecting the best? They pay us our fees, do they not? Then I hold it is our duty to give them the best that can be obtained and that is in our power, yours and mine, to render them. You will pardon me for opening my essay in this manner, but my heart is in this work and I wish to lead as many out of the dark and into the light as I can. I can say truly to you that it is not so many years ago when I was taken by the hand, so to speak, and led from the darkness into the light. From that time to this I and my patients have had the greaetst satisfaction that they have had in over twenty-five years of practice.

There is probably no operation that we are so often called upon to perform and that is attended with so much uncertainty, anxiety and many times of so much importance as is the treatment and filling of root canals. In conversation with different members in our profession upon this subject, there seems to be such a great diversity of opinion and methods regarding what is scientific and what is not scientific that I thought some good might be accomplished if I cited two or three cases, their conditions and treatment from the time the patient first consults us until the root canals are filled. I wish if I can to interest you a trifle in this subject to the end that some good may come to us all. I claim no originality in what I offer, but the results are based on observation, reading, practice and conversation with other men. A patient consults us regarding the condition of an upper right first bicuspid. The patient complains of this tooth feeling longer than the rest, that it is loose and sore to the touch. The patient did not sleep much the night before, so we conclude that we have a dead pulp to deal with. On examining the tooth we find a large cement filling in the mesio-occlusal surface. The patient further says that the tooth had given some trouble prior to its being filled, some two or three years previous to consulting us. Since it was filled with cement it had not given any trouble until within the past two or three days. The teeth and gums on that side of the mouth are washed with alcohol or some other antiseptic. The rubber dam is then adjusted on the central, lateral, cuspid, first and second bicuspids and first molar, The exposed crowns of the teeth and dam are now washed with alcohol, as a precautionary measure against any possible outside infection. When this is completed an aseptic spear-pointed drill is placed in the dental engine hand piece and the filling removed. As was expected, the filling was made on a mass of soft decay, in fact this pulp was capped. I have long since abandoned the hope *exposed in children's teeth*, but *I do* NOT attempt to cap an exposed pulp where that exposure is made from the removal of soft decay from the cavities. I know that the results are much more satisfactory where the pulp is destroyed, removed and the root canals filled, than where it is allowed to die under a filling that is made on a mass of soft decay, the dentinal fibrils gorged with disorganized matter and the peridental membrane subjected to constant irritation therefrom. In such cases as I have just cited I destroy the pulp and fill the root canals at once. Now let us go back to the first case mentioned, this case of the bicuspid with the cement filling. I remove the filling, then I take a large rapid excavator or discoid, remove the decay and find the pulp dead and disorganized. I wash the cavity and pulp canals with just as hot water as the patient can bear, then dry the cavity and flood the same with white oil of cloves. Then with a broach I coax or tease from the canals all the remnant of the pulp possible without forcing any of the septic matter into the apical space. Greatest care must be exercised in doing this special part of the operation. I believe that just as much and more depends upon the mechanical cleansing of the root canals as depends upon the medicinal treatment, for the reason that the dead pulp is the irritating cause and without its removal the results that we wish cannot be obtained. Now let us go back to this case again. After removing all of the dead pulp that we can the canals are as thoroughly washed with hot water as is possible. The canals are then dried and filled with the white oil of cloves and dressed with a single wisp of cotton. If any surplus oil of cloves remains in the cavity of the tooth it is removed and dried with alcohol on a pledget of cotton. The cavity in the tooth is now moistened with the oil of eucalyptus and filled wiht pink gutta-percha. This I feel should be carefully done, as everything depends upon the exclusion of the saliva and the micro-organisms with which it abounds. I believe the slovenly, half-hearted way of filling the cavity in the tooth with cotton and sandarac varnish is a thing of the past, so far as this relates to the intelligent and progressive men of today. Another thing. How absolutely absurd is the idea that the filling at this point should be punctured to give vent to any accumulated gas, for most assuredly where gas could escape micro-organisms could invade. After filling this tooth with gutta-percha the patient is dismissed for twenty-four or forty-eight hours, with instructions, however, to return at once should the trouble recur. But the trouble does not follow, provided the treatment has been made as I have stated. At the end of this time, on the patient's return, the root canals may be permanently filled.

Now for brevity let us assume that when we opened into this bicuspid the body of the pulp was dead, but that portion of the pulp remaining in the apical third alive, quite sensitive to the touch of the instrument and we had some hemorrhage. Where such a condition of affairs exists, I should use the hot water just as stated, flood the cavity with white oil of cloves and, after waiting a few moments, dry the cavity and use aromatic sulphuric acid. I should remove the remaining portion of the pulp, cleanse the root canals as thoroughly as possible and fill the canals at that sitting. This method I have followed for so long a time and so often, and have yet to have the first patient return and complain of pain, that I give it you as a good method to follow. And now let us assume another condition. Suppose that upon opening into this tooth or even before, we suspected there was a pus pocket at the apex. If this existed I should try and drain the pus through the tooth. By following this method there would not be the liability of giving trouble by forcing septic matter through the apical foramen, for it would be drained out with the flow of pus. Suppose there was a pus pocket in the apical space and that it would not drain, in other words, the apical third of the root canal was filled with diseased matter, if I could not get my broach into the apical space I would flood the canal with aromatic sulphuric acid and enlarge it. I should then drain the pus from the pocket, thereafter use hot water, cleanse the root canal, dry the cavity, removing all the moisture that I could, flood the root cavity with the white oil of cloves, dress the canals with a single wisp of cotton and just as before, fill the cavity in the tooth with gutta percha. The patient would then be dismissed for a week or ten days. At the end of this time, upon the patient's returning, the rubber dam would again be adjusted, the filling in the cavity of the tooth removed and then if I found the dressings dry and free from odor, I should permanently fill those root canals. If the conditions were not favorable for filling the canals of the tooth, they would be treated just as before and the patient sent away for another week, but this is seldom necessary, for with the removal of the cause of the irritation, the parts will readily heal.

Often in multi-rooted teeth it is necessary to treat each canal as a separate condiiton, for the conditions existing in each root canal may be different. Now, gentlemen, this is not theory or stretch of the imagination. It is a veritable fact. For instance, let us take an upper first molar with a cavity of decay upon the mesio-occlusal surface and extending well to the gingiva and nicely filled with gum tissue. This gum tissue is so hypertrophied that it readily protects the pulp from all ordinary irritation, although no use can be made of the tooth in this condition. After preparing the teeth and gums for the application of the rubber dam, the dam is adjusted and thereafter the hypertrophied gum is removed. Upon opening into the pulp chamber we find the body of the pulp gone. On further examination we find the lingual root canal filled with a solid mass of light colored cheesy matter. This is removed en masse from the canal. After various attempts the opening into the mesio-buccal root canal is not found. In the disto-buccal root canal we find a considerable amount of sensitiveness and the apical half of the pulp very much alive. In fact there is quite a hemorrhage from this canal. Now what is to be done? The lingual root canal would be treated with hot water and after drying, it may be dressed with some passive remedy. I prefer the white oil of cloves. The portion of the pulp remaining in the disto-buccal root I remove and I fill that canal permanently at once. We must take time to find the opening into the mesio-buccal root and perhaps call to our aid aromatic sulphuric acid. So many conditions of the kind I have just described to you have come to me and have received just such treatment as I have here outlined that I felt it was of greatest importance to say to you that it is often necessary to treat each root canal as the root canal of an individual tooth.

In closing let me say that the general tendency of the times is constantly toward simplicity and this simplicity is invading every department of life. If you will but examine the reapers, the mowers, the rakes and every class of machinery that is at present on the market and compare them with those made twenty years ago, a person is all but appalled at the former monstrosities and, gentlemen, they were monstrous things. Now what has brought about this change? Simply the development of knowledge. Man has taken advantage of that knowledge as it has been developed. Let us be alive and up-to-date. Let us also take advantage and make use of the knowledge which others have developed for us, especially as it relates to employing these methods in our daily operations.

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EDITOR:
WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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SIX YEARS' WORK IN ORAL PROPHYLAXIS.

(Read before the New Jersey State Dental Society, Thirty-fourth Annual Session, July 20th, 1904.)

BY D. D. SMITH, D. D. S., M. D., PHILADELPHIA, PA.

The term oral prophylaxis, so recently injected into the vocabulary of dentistry, is endowed with a meaning which as yet seems not well understood.

Prophylaxis is quite commonly confounded with prophylactic, and is used by speakers and writers interchangeably with it, when, in fact, the two words have quite separate and distinctive significations. These terms are also used, apparently without discrimination, as synonyms for asepsis, oral hygiene, oral massage, and whatever is supposed to ward off disease of the teeth.

One dental writer says, "Prophylaxis has invaded the domain of nearly every disease, and its science and practice is daily increasing and its field of usefulness becoming better known."

Prophylactic measures may be employed to ward off some diseases when preventive remedies, from experience, commend themselves, or when experimentation in this direction seems warranted, but to affirm that "*prophylaxis* has invaded the domain of nearly every disease" seems a confusion of terms.

It is to be hoped that the science of prophylaxis is becoming better known, but it cannot at present be said that prophylactic remedies or the prophylaxis treatment is "well understood" in dentistry, or that either is applied or practiced as a science.

In defining the terms prophylactic and prophylaxis we would emphasize the fact that prophylactic is a word used both as an adjective and as a noun, and that it relates to therapeutic *remedies*, which may be administered as preventative of disease. Prophylaxis relates to remedial or preventative *treatment*. The dictionaries generally pointed to the signification as here given when the first paper on this subject was prepared and read in 1898, under the caption "Prophylaxis in Dentistry." Only one has been found to give prophylaxis any other meaning; this, as follows: "Prophylaxis, preservative treatment for disease; conservation;" from which one would naturally infer that prophylaxis preserves and conserves disease, instead of preventing it.

Webster's Dictionary, 1901 edition, defines prophylactic as follows: "Prophylactic a *medicine* which preserves or defends against disease; a preventative;" and "prophylaxis, the *art* of preserving from or of preventing disease. The observance of the rules necessary for the preservation of health; preservative or *preventative treatment*."

Worcester gives: "Prophylactic, an adjective, preventing disease; preservative." Prophylaxis not defined.

The Century: "Prophylactic. *n.*, pertaining to guarding; precautionary; keep guard before; anything, as a *medicine*, which defends against disease; a preventative of disease; and "prophylactic, *a.*, preventative; defending from disease, as prophylactic doses of quinine." (That is, treatment by therapy; therapeutic treatment.) "Prophylaxis, the guarding against the attack of some disease;" example: "The germs do not appear to be very tenacious of life, so that an efficient prophylaxis may be readily exercised."—*Science*.

Standard Dictionary: "Prophylactic, any medicine or measure efficacious in protecting from disease." "Prophylaxis, preservative or preventative *treatment* for disease; especially a particular form of disease in an individual."

Briefly then, prophylaxis is an art or a surgical treatment, involving manipulative effort, as distinguished from the administration of a systemic medicament or a therapeutic remedy. Hence, oral prophylaxis implies surgical instrumentation or treatment of the mouth and teeth in contradistinction to a germicide, a wash, or any form of medication for the prevention of disease in the oral cavity.

Although the title of this paper is "Six Years' Work in Oral Prophylaxis," the time really covered in developing the treatment, by the author, embraces a period of ten years. Experiments were carried forward on members of my own family and among friends for four years prior to the reading of the paper on "Prophylaxis in Dentistry" referred to above, that theories might be verified before giving any publicity to the treatment. The results were so satisfactory that in the beginning of the fifth year it was determined to force recognition of it in general practice, little dreaming what astounding revelations were to follow.

In reviewing the subject at this time it will be my endeavor, as in former papers, to present some of the remarkable phenomena which appear as unvarying results, from a consistent and intelligent prophylaxis treatment. While these results are surprising, almost startling to one who has never witnessed them, they are but the logical and inevitable outcome of this system of caring for the mouth and teeth.

PROPHYLAXIS TREATMENT AS APPLIED TO TEETH IN THE MOUTH.

To understand what the prophylaxis treatment in its application to the mouth and teeth is, we must understand the long train of unstudied and disregarded pathologic conditions which have their origin in the undisturbed infection on and about the teeth in the human mouth.

Calcific deposits are constantly occurring and recurring, and not less the more immediately hurtful acidulated bacterial accumulations; and more dangerous still the inspissated mucus which cements mouth fluids, mucoid excretions, decomposing food particles, and other septic and odoriferous matter upon the teeth; this debris is all maintained at the high normal heat of the mouth—98.6° F.—and furnishes ideal conditions for the proliferation of germs, the induction of decay, and the fostering of disease in the human system. The pathologic states of the mouth and teeth in the order of their seriousness and frequency, may be defined as follows: pericemento-alveolar inflammations, dental caries, and impeded alveolar development.

Resulting from the first and most important—pericemento-alveolar inflammations—we find gum inflammations, alveolar absorption, pyorrhea, stomatitis, and pericemental abscess; the latter a serious condition, resulting in the inevitable loss of the tooth. Caries, with its attendant decalcification of dentin, followed by pulp exposure, alveolar abscess, and final destruction of the *crown* of the tooth, although it has engrossed the thought of dentistry in the past and is the embodiment of its efforts in the present, is far less serious in its results. Impeded alveolar development, a common result of mouth infection of childhood, is a cause of many alveolar deformities and many crowded and irregular conditions of the teeth;—conditions which detract from the charm of facial expression, greatly increase infection, incite decay and multiply loss of the teeth.

Whether conscious of it or not, every human being with natural teeth is a sufferer from mouth infection; some to a greater extent than others—the civilized more than the savage.

The oral prophylaxis treatment, as instituted and recommended by the author, has for its one object and aim the freeing of the oral cavity of conditions of tooth decay, conditions which have become practically universal, and the eradication of infection from the mouth to conserve human health and prolong human life. In all stations and conditions the treatment has demonstrated its sufficiency and its reasonable practicability. The benefits accruing to the teeth and mouth, and hence to the general health, are startling in the scope of their marvelous efficiency.

SUBSTANTIATION OF THEORIES RESPECTING TOOTH DECAY AND TOOTH PRESERVATION.

In previous writings I have persistently maintained that tooth decay always begins on some surface of the tooth which is exposed to the fluids of the mouth. It never originates in the substance of the tooth unexposed, either crown or root. If the decay is in the crown, it begins in the enamel; if devoid of enamel, it may attack the surface of the dentin at any point. Once in the dentin, the decay proceeds along the lines of the tubules in the direction of the pulp. The process of tooth-solution, which we call decay, is largely chemical, and is hindered or opposed by two conditions only: (*a*) the composition or consolidation of enamel and dentin, (*b*) the expression of vital energy interposed by a living pulp—a force often scarcely appreciable. No matter what the physical state of the crown of the tooth, whether hard or soft, good or bad, alive or dead, the agents and agencies which cause decay are in the environment or surroundings of the teeth. Evidence from practical experience in support of this is abundant and unvarying. A simple and incontestable proof is found in the state of an extracted tooth. Let a pulpless, decaying tooth be removed from a mouth where the environments are such that resolution is rapidly taking place, and let it be placed in water, alcohol or glycerin, or simply exposed in the air, and all decay in that tooth is immediately arrested; any further disintegration will come only with the lapse of years.

To institute simulated or artificial decay in a tooth while it is out of its natural environment, as has been frequently done, is wholly unavailing as a matter of scientific investigation. All such processes are but artificial decomposition, and are so unlike tooth-decay in the mouth that true scientific research is not advanced by them. Teeth are the subject of true decay only when they are in the normal menstruum and temperature of the mouth.

The all important matter for dentistry to consider and determine is, whether oral prophylaxis, understood and properly instituted, will arrest, prevent, or retard decay of the teeth *in the mouth.* To this end there is needed not *theorizing* but clear clinical observation and close study of mouth conditions.

Ten years experimentation has abundantly demonstrated that while the treatment will not arrest decay which is already in progress, whether as new cavities or under old or imperfect fillings, it will prevent its appearance on surfaces where the prophylaxis treatment has been regularly instituted. It will also greatly retard the progress of decay in open cavities and under old fillings.

An editorial in a recent number of *American Medicine* reads in part as follows: "There are ten millions of them! Everybody knows about them, the disease they spread, their horrors, their worse than loathsomeness! Everyone endures, submits in silence, feels himself powerless to remedy. Boards of Health cannot, or think they cannot, attack the evil; or they are too busy with things they think are more important. And so the filthy country and village water-closet persists from generation to generation. The intellectual philanthropist is yet to come who shall undertake one of the greatest reforms of the world."

The greatest sanitary reform of the world is not the abolition of the village closet, but it lies in the herculean task of revolutionizing the unsanitary and infectious condition of the human mouth. Contagion and disease from the latter are a thousand fold more subtle and dangerous than from the former, for infection in the human mouth is found not in country or village alone, but in town and city—in all places where humanity dwells.

If this be true, and who shall dispute it? oral prophylaxis treatment presents itself as a subject of momentous import both for the profession and the public. It is not a matter to be tossed hastily aside because it does not coincide with our prejudices or preconceived opinions; neither is it a matter to be adjudged wholly from the standpoint of self-interest. Theoretical difficulties have been presented and unjustifiable self-interests have been urged against it, until we have sometimes asked with unutterable groanings, "Is dentistry, with such views, worthy to be called a profession?"

One writer declares, "The great limitation to the universal success of Dr. Smith's method lies in the non-receptiveness of the mass of the people to methods involving as much attention to detail as must be required of those patients following his system."

This unjustifiable deduction in the *Cosmos,* from the pen of a professor in dentistry, exhibits not only the prejudice of inexperience, but shows a lamentable, if not inexcusable, ignorance of the whole subject of oral prophylaxis; it is an example of the futility of theory in dentistry *vs.* practical experience.

In reply to the seeming objection respecting "the non-receptiveness of the mass of the people," it may be said, the statement is assertion only; it has no basis in fact.

To "the mass of the people" dentistry of the present, extends no benefits, it presents no hope, it affords no relief, save in the one direction—that of ridding the mouth of aching teeth through extraction. "The mass of the people" are not instructed respecting the teeth; they are wholly unacquainted with the necessities, requirements or value of these organs How, then, should they be expected to follow out any theory or give attention to the details of any "system" for their betterment or preservation.

This, however, is true—whenever requisite presentation respecting the infectious states of the teeth in ordinary conditions of the human mouth is made to people of intelligence, with whom dentistry has largely to do, and the relations of these conditions to decay of the teeth has been correlated and explained, the liveliest interest has always been awakened, and patients have been stirred to willing co-operation in all reasonable efforts for the betterment and immunizing of the teeth by the system of prophylaxis treatment I have advocated for the six years just past.

When instructed, patients have been quick to see and appreciate the imminent danger of systemic infection due to septic states of untreated teeth. A set of septic teeth, ordinarily presenting a surface of twenty to thirty square inches in the oral cavity, a cavity which has been aptly designated the vestibule of life, is a perpetual menace to human health.

No adequate consideration has ever been given to the sources of infection inherent in the human mouth, consequent upon the presence of natural teeth. The adverse *local* consequences —decay, alveolar necrosis, pyorrhea, gum recession and final loss of the teeth—are as nothing in comparison with the evils to be revealed in the systemic disturbances and diseases which result from the continuous state of infection found in association with the teeth in the human mouth. These conditions studied by dentistry and intelligently set forth to "the mass of people" would find "a receptiveness" which would not only astonish the opponents of this "system" of preventive treatment, but would render incalculable benefits to general health, longevity, and the happiness of all civilized humanity.

WHAT THE PROPHYLAXIS TREATMENT IS.

Let us here consider the nature and character of the prophylaxis treatment, and what it does for the mouth and teeth.

In general, the treatment consists of enforced, radical and frequent change of environment for all teeth and all mouth conditions, and the maintenance of perfect sanitation for the oral cavity. More in detail, it is the careful and complete removal of all concretions, calcic deposits, semi-solids, bacterial placques and inspissated secretions and excretions which gather on the surfaces of the teeth, between them, or at the gum margins; this instrumentation to be followed *in every case* by the thorough polishing of all tooth surfaces by *hand methods—power polishers should never be used*—not alone the more exposed labial and buccal surfaces of the teeth, but the lingual, palatal, and proximal surfaces as well, using for this purpose orange-wood points in suitable holders (porte polishers) charged with finely-ground pumice stone as a polishing material. Treated in this manner the teeth are placed in the most favorable condition to prevent and repel septic accumulations and deposits, and what is of equal importance, it aids the patient in all efforts to maintain sanitation and cleanliness.

"Brushing the tongue" for the removal of infectious coatings has been advocated more recently. Tongue *brushing* is impractical and devoid of utility. A coated tongue, especially if accompanied with tonsular inflammation, may very properly and advantageously be disinfected (mopped off) by the use of germicidal applications on bibulous paper. I have produced marked beneficial results, when finding the tongue infectiously coated, through mopping it off once or twice a day with phenol sodique. There are other remedies for this purpose perhaps equally efficient.

SOME SPECIFIC BENEFITS.

Studying more closely some of the specific benefits which result from the oral prophylaxis treatment, we notice first those that accrue to the teeth themselves. Three to six months of this treatment consistently carried forward will effectually change the whole appearance, and to some extent the whole character of a set of teeth. This change is seen in all cases, young and old, but it is especially marked in children and youth and in young adults. The dull, opaque and lifeless aspect of the teeth exhibited in ordinary conditions of nearly all mouths, quickly gives way, under the prophylaxis treatment, to a clear, pure tooth color; the teeth in a limited time become naturally translucent, and present the appearance and true characteristics of living healthy organs. Teeth that appear as a disfigurement in the mouth, even to disgust and loathing, when subjected for a time to the prophylaxis treatment, become strikingly ornate and attractive. The osseous structures, after a few months, exhibit unmistakably a marked change for the better, and in most cases they become wholly immune to decay. The vital forces within the tooth—the pulp,—and those surrounding it—the pericementum and its connections—are stirred and stimulated to new life and activity. Circulation in dentin and enamel is revived and quickened: old, stagnant colors and deposits are manifestly taken up and removed, and new, fresh material deposited in place of them.

It is most interesting and instructive to witness the awakening and revivifying of the life forces of the teeth under treatment, as exhibited in the discharge of this undue and disagreeable color, in the brightening general aspect, and in the cessation of hyper-sensitiveness and irritability.

An irritating, life-destroying infection continuously adherent to the surfaces of untreated teeth, becomes a condition of violent exhibition in some cases, and when trained to recognize it, it is distinctly manifest in all. This infection retards circulation, hinders nutrition, and greatly interferes with the general health of the teeth. Manipulative treatment and the medication attending its frequent removal, stimulates and fosters the remarkable changes and improvements noticed in the character and substance of all teeth which are the subject of this treatment.

The prophylaxis treatment, as yet, but very imperfectly understood even by its friends, has been charged as merely a form of "tooth cleaning." Far more than this, it is a manipulative process that positively relieves the teeth from a virulent infection, and introduces a stimulation most beneficial to their internal and external life. If a tooth cleaning process, it is one of profound significance.

If time would permit, instances might be specifically cited and multiplied in which *no* new decay has appeared in mouths, even with complete sets of teeth, for four, five, and six years; and many others in which but a modicum of decay has been found in the same length of time, and that chiefly around old fillings.

WHAT IT DOES FOR DECIDUOUS TEETH.

The deciduous teeth in all cases are quickly and markedly influenced by the treatment. Of the limited number of children under seven years of age who are under the prophylaxis treatment, not one presents a new decay or a new defect in a tooth.

AN INTERESTING CASE.

One remarkably interesting and instructive case is that of a boy, a strongly-marked nervous temperament, brought to me when but three and a half years of age, in delicate health. At this time there were five large cavities—three approximal—in his teeth, and two places exhibiting such predisposition to decay that I prognosed cavities in them within three months. Through exercise of patience and perseverance the cavities were excavated and filled, with amalgam. (Perfect operations were impossible.) Immediately following the filling, for an entire year, his teeth were carefully treated every two weeks, barring one month during the summer vacation. Since that time—nearly five years—I have seen him on an average once a month; meanwhile his teeth have received rather more than the ordinary care of childhood, at home. The boy is now in his ninth year, with this record:—excessive nervousness arrested; general health fully established; teeth, as to decay, in perfect condition (predicted cavities did not appear); one new pin-head cavity in distal sulcus of left superior temporary molar (probably started before first five fillings were made); one re-decay around largest and most difficult of the five original fillings. Twelve of the temporary teeth have loosened and come out, every one in nature's own way, through complete root absorption. First permanent molars, inferior and superior permanent incisors erupted, cuspids presenting. The first molars—erupted at five and a half—have unusually large crowns with strongly-marked, pointed cusps and correspondingly deep sulci and linear markings. Formation, shape, and time of eruption of these teeth, presaged early and rapid decay; nevertheless, they are (at this writing all in perfect state of preservation, and evidently improving in character. Neither infection nor chemical agents are permitted to fasten upon any of their surfaces, and the life forces are evidently building into them a more compact and decay-resisting structural consolidation.

The benefits resulting from the prophylaxis treatment as exhibited in this case are equally marked in every case where deciduous teeth have been subjected to the treatment.

Another result, convincing as to the benefits of this treatment beyond all others that can be cited, may be witnessed in connection with many cases in which decay, running riot in both temporary and permanent teeth at ten and eleven years of age, has been practically stopped following the full institution of the prophylaxis treatment. The second or twelfth year molars, erupting into a healthy environment, have been universally found in perfect condition, and have continued thus far devoid of decay, even in the sulci. Not in one instance merely, but in practically every instance, these conditions exist.

Other and most convincing proofs may be seen in connection with the eruption of wisdom teeth. Perhaps the most noteworthy instance in my practice in this connection is that of a young man, at the time about nineteen, for whom I had operated from boyhood, long antedating the introduction of the prophylaxis treatment. The teeth in this mouth had decayed early and in all directions. Crown, approximal, and labial fillings are to be seen in all parts of the mouth; even the lower incisors and cuspids had not escaped. The four wisdom teeth appeared about two years after beginning an irregular and unsatisfactory course of prophylaxis treatment, but even with this, the contrast between these teeth and the twenty-eight which preceded them affords a most instructive lesson regarding the benefits of treatment. Despised, misrepresented and condemned to decay and loss, as wisdom teeth frequently are, these teeth (and I could mention a number of other similar cases) erupting into a mouth which had been but quite irregularly under treatment, were perfect. Decay appeared in every class of teeth which developed before prophylaxis treatment commenced, but in these wisdom teeth there was neither decay nor the appearance of it, and this condition pertained until the case passed from under my care.

THE INFLUENCE OF THE PROPHYLAXIS TREATMENT ON SENSITIVE DENTIN.

As a further observation of the benefits of this treatment, I desire to put on record a development of marked significance; namely, a decided modification noticed in the sensitiveness of the dentin of teeth, especially in children, following the institution of a regular and consistent treatment. Diminishing of acute sensitiveness seems to follow as a general result, and not to be some special temporary condition. The extreme sensitiveness in the dentin of young teeth has been so modified and lessened, apparently by this treatment, that ordinary operations for filling have been performed without the intense suffering usually attending such cases. Children and young people who are under this treatment, submit to ordinary operations without compulsion or special complaint. Operations that under the old regime would cause much suffering, if not deemed unbearable, have been greatly mitigated in intensity.

It is an inadequate presentation to say, that the prophylaxis treatment is a marked modifier of sensitive dentin, especially in the young, and that it is a mitigator of suffering under all dental operations. This may seem an extreme statement, but when fully tested by experience it will be received as conservatively true.

Hyper-sensitiveness of dentin is a result of pericemental irritation far more than of pulp irritation. The external and most important life of the tooth—the pericemental life—is markedly influenced by the irritative infection found always at the necks of untreated teeth. Removal of this infection is the removal of the cause of much of the undue sensitiveness of dental tissue.

THE MARKED BENEFICIAL INFLUENCE OF THE TREATMENT IN CONNECTION WITH GUM AND PERICEMENTAL TISSUE.

The benefits which accrue directly to the teeth are not more manifest nor more pronounced than such as immediately appear in the pericementum and gums. The presence of irritative infectious matter on the surfaces of untreated teet sufficient to affect the pericementum and surrounding g tissue, is found in connection with all untreated teeth. It appears coeval with their eruption, and continues, in ordinary conditions, as long as the teeth are retained. It is bounded only by the extent of the dentate surface exposed in the mouth; as a result, the pericemental tissue and gums in ordinary mouth conditions are perpetually in a state of undue sensitiveness, and not less, a condition of undue vascularity. Under the prophylaxis treatment, through which all irritants are removed, these tissues quickly lose their extreme and unnatural sensitiveness, and recover the normal condition of low-grade sensibility. (Gum tissue in health, is always without acute sensation.) The circulatory vessels also lose the unnatural distension and tumefaction consequent upon irritation, recover tonicity, and contract to normal dimensions. Three to six months of treatment will remove all marked sensibility and tendency to bleed, and operations for filling at cervical margins, especially on the upper jaw, can be safely and easily performed without the use of the rubber-dam. It is the irritative, toxic matter at the necks of the teeth that occasions the sensitive states and highly vascular conditions of the gums and pericemental tissue. A mouth with teeth free from this infection, and kept in an aseptic condition, will have gums tense and hard, without vascularity and without undue sensibility.

We have then, to commend the prophylaxis treatment: first, for its prevention of decay; second, for its stimulation to external and internal life and health of the teeth; third, for its influence in decreasing sensation in dentin and gum tissue; fourth, for its correction of the undue vascularity in gum tissue; and fifth, for its positive removal of all infection from the mouth and ultimately from the breath.

SELF TREATMENT BY PATIENTS.

It may be well to enter somewhat into detail respecting the care and co-operation expected, *even required,* of patients under the prophylaxis treatment. In the beginning, for four or six months they are required to present regularly, on appointment, once a month for treatment, which is carefully applied, using only hand methods as heretofore described. Every patient should be armed with proper appliances, especially brush and dentifrice, for cleansing the teeth and mouth, and fully instructed in the use of the same.

The tooth-brush, which is the main reliance of the patient, is at best an inefficient instrument for cleansing teeth. It is, however, the best our civilization has produced, hence until something better is devised, necessity compels the use of it: of the hundreds of shapes, varieties and kinds on the market, very few are suitable for use. Unfortunately the choice and *selection* of tooth-brushes for the general public is now largely relegated to salesladies in the department stores, and the preparation of dentifrices and so-called mouth-washes is in the hands of druggists; a condition of things as incongruous as is the compounding of medicines by the post-office clerk in a general country store. Would not dentistry itself be greatly embarrassed, if not awkwardly handicapped, if suddenly confronted with a demand, from kingly authority, for a really efficient tooth-brush or dentifrice? Probably not one in a thousand could present a clear, consistent idea of what the character or shape of a brush should be to best do the work of cleansing the teeth.

It may be said without hesitation or fear of contradiction, there is no part of the human body which is so imperfectly and ignorantly cared for as this most important cavity containing the teeth. Attending to the teeth by the patient is a matter which has neither been studied nor taught either by the professionalist or the laity. The child is *taught* to wash the hands, to bathe the body,—but the human mouth, the very vestibule of life, is left wholly without intelligent care.

Witness the education of the average child in a matter of such vital importance:—after breakfast (occasionally), "John (or Mary), have you brushed your teeth this morning?" "No, ma'am." "Well, go right away to the bath-room and brush your teeth." Has the child ever been taught rational methods? No. Examine the equipments placed in the hands of childhood for this important operation. Even when new, a cheap, illy-adapted brush and unusable dentifrice (good enough for the children) is all they can find. This want of intelligent instruction, and these careless methods in childhood, follow through life.

The results are everywhere seen in repulsive exhibits of decayed, infection-coated teeth, offensive breaths, a display of discolored fillings, and that dental monstrosity, so common—the gold crown.

Solomon said of the teeth of the daughter of Zion, the perfection of beauty, "Thy teeth are like a flock of sheep, even shorn, which go up from the washing whereof every one bearest twins, and there is not one barren among them." A most beautiful description of a perfect, thoroughly-cared-for set of teeth.

The general public, compelled to rely on the tooth-brush, is yet without proper equipment for cleansing the teeth. The whole operation soon becomes distasteful, irksome, and generally the merest farce. Patients present with mouths reeking with infection, teeth loaded with deposits that are antiquated, and affirm "that they are very careful about brushing their teeth."

All this should be changed. It can only be done by a process of education, and that through instruction given by dentistry. Every dentist should first inform himself, and then fully instruct individual patients in the details of the care of the human mouth. The people should be taught that cleaning the teeth is not merely the *possession* of a tooth-brush. The best shaped brush in the world will not clean the teeth in a human mouth unless it is intelligently used.

A tooth-brush should possess the requisites of shape, substance, and stability. In shape it should be plain and perfectly straight, the bristles neither coarse nor fine, set in rows of different lengths; in substance, all of the best materials. There should be no concavity to fit the arch when the brush is at rest; no fancy curves; no tufts of bristles at the end. It should be of size, in length and width, to form a mass of bristles to cover the teeth and give stability and substance when in use.

In using the brush it should be passed over labial, buccal, lingual, and palatal—or the whole outer and inner surfaces of the teeth, with a vigorous *horizontal* movement, the hand adapting the brush, as far as possible, to all tooth surfaces. With care and a straight brush all parts of the exposed crowns may thus be reached and cleansed as well as a brush can do this office work. Attempting to cleanse the teeth with the vertical movement, using a concave brush, as some teach, on the convex surface of the dental arches, while of little avail, will do no harm, either to the teeth or gums. Such use of the brush in a measure relieves the interstices of food remains, and thus assists in a work that can be much better done with a tooth-pick. The most widely advertised, and perhaps the most popular toothbrush of the present, is the so-called "prophylactic." This brush, and all similar in shape, is a conspicuous example of lack of adaptation of means to an end. It demands the vertical movement of the brush on the external surface of the arches and on the inner surfaces it presents a double bow, most effectually preventing contact of any considerable surface of the brush with the most uncleanly portions of the teeth. A plain brush, with horizontal movement, is much better and much more efficacious.

It has been urged that the vertical movement of the brush s as a kind of massage, tending to brush the gums onto the teeth, while the horizontal movement brushes them away from the teeth. This is the merest *theory*, a statement wholly without justification in actual conditions. The vertical movement of the brush is not more a massage of the gums than is the horizontal movement. There is no process of brushing which approximates a massage treatment of the gums, and it would avail nothing if there could be. My patients are always instructed, in connection with the prophylaxis treatment, to use the brush with a vigorous horizontal movement, even when the gums and alveolar process have necrosed until the festoons have become everted, and to continue the brushing until the teeth are not only brushed but *cleansed*. I have never yet seen a case in which reformation of tissue has not followed the treatment, and in all cases not connected with pyorrhea, restoration of the festoons has been complete and perfect.

The tooth-brush implies a dentifrice, and a dentifrice is demanded for cleaning the teeth. To attempt a review of the compounds under the head of so-called dentifrices, would consume far more time than is allotted this paper. We can only say of the tooth powders, tablets, washes and pastes sold as dentifrices, while they are manufactured and sold largely through the greatest empiricism, and while some are far more efficient and pleasant than others, few of then can be classed as positively harmful when used within proper limits

So-called tooth powders are compounded from some base, generally prepared chalk (*calc. carb. precipitas*), orris root (*iridis Florentinæ*), acidum salicylicum, or some other material. To the base selected may be added, according to the fancy of the druggist or compounder, white sugar, soap, soap-bark, cinchona, cinnamon, cuttle-fish bone (*ossis sepiæ pulveris*), pumice stone (*lapidis pumicei pulveris*), flavoring and coloring, or whatever may be supposed to make a pleasant and salable preparation, to be advertised and sold "for beautifying the teeth and imparting sweet odors to the breath." We are not altogether decrying these powder preparations, for some thing of the powder or soap nature is demanded always, with the brush. Patients should be taught to avoid all pastes or liquid dentifrices, for they are not only inefficient, but frequently harmful. A good soap, as a pure Castile, may be used *ad libitum*, and always with benefit to the mouth.

The impression very generally prevails that the *time* for brushing the teeth is after meals. This is a fallacy for dentistry to uproot. To receive the greatest benefit from the use of the tooth-brush, the mouth should be thoroughly cleansed always just *before* meals. Infection gathers upon the teeth in the interim between meals, when the salivary glands are at rest and the teeth not in use; it is during periods of rest that the mucous secretion and mucoid excretions from mucous surfaces are lodged upon the teeth in greatest quantity. Cleansing the mouth and teeth from this viscid debris *before* meals, prevents the washing of these toxic tooth accretions into the gastro-intestinal tract with the food. Who is not taught to wash the *hands* before meals? Of how much greater importance is the cleansing of the human mouth! If the accustomed method with the brush is not practicable, it may be always practicable to thoroughly rinse the mouth with water and to wipe the main exposed surfaces of the teeth with the corner of a towel or napkin. This method of cleaning the teeth is not enough in vogue. After meals, the teeth may be freed of food remains with some form of tooth-pick, preferably the "quill," which is all that is required. Careful cleansing, devoting not seconds but minutes to the operation, should always precede retiring for the night and immediately succeed rising in the morning.

Cleansing the mouth thus frequently, and at stated periods, will greatly tend to preserve the teeth from decay, and surely lessen the inroads of systemic infection.

ANOTHER VIEW OF MOUTH-INFECTION.

The photographer who would make sure of a satisfactory picture, having made one negative, will frequently change the position of his subject for another view; he may move the head into another light, readjust the camera and screens, or perhaps rearrange the shading. That we may fasten upon the mind and carry away with us a more vivid and lasting picture of these adverse, repugnant and hurtful mouth conditions, let us here endeavor to secure a picture from another point of view.

A Mr. McC. quite recently applied for relief from one of the most unpromising conditions of pyorrhea it has been my good fortune to encounter. I say "good fortune," for I regard it as good fortune that through study and practice of the oral prophylaxis treatment the dental profession is now able to throw off the shackles which have so long held it in bondage to the commonly accepted theory that alveolar pyorrhea is a *disease* of constitutional origin, and incurable. It is good fortune as well as a great pleasure to bring relief to a long list of afflicted ones, and to proclaim the fact that alveolar pyorrhea is not a *disease* in the true meaning of that term; that it does not result from the gouty or uric acid diathesis; it is a pleasure to proclaim that it is not a result of some "constitutional vice" nor of any special constitutional condition. The glamor and charm of mystery no longer hangs over this affection; the light of rational, indisputable, scientific truth shines through the mists and clouds of speculation and theory which have so long enveloped it.

WHAT ALVEOLAR PYORRHEA IS.

Alveolar pyorrhea is not properly classified as a "disease." Its very definition—flow of pus—implies that it should be taken from the category of diseases and placed among the inflammations. Properly defined, alveolar pyorrhea is an inflammation within the confines of the pericemental membrane and contiguous tissues; an inflammation due wholly to the irritation resulting from stagnant septic matter adherent to the surfaces, necks and roots of natural teeth. It need no longer be said that these are "constitutional conditions, complex in their manifestations;" neither that their "medical and hygienic" management are almost exclusively in the hands of the physician." How utterly absurd is the proposition that the "duty of the dental practitioner is confined largely to the question of diagnosis." Treatment of pyorrhea relegated to the medical profession! *Neither* diagnosis nor treatment belongs to medicine; it is a mouth disorder strictly within the realm of the dental practitioner. It is to the discredit of dentistry and not of medicine that such inconsiderate and contradictory teachings prevail respecting it. It is a mouth affection in association with the teeth of which medicine, as a profession, has never assumed to know. Occurring in mouths with large, strong, and apparently healthy teeth, how should medicine suspect that it is largely, if not entirely, the prime cause of renal disturbances, uremia, diabetes and albuminuria; and many other constitutional disturbances of which we know so little?

I here exhibit casts of the mouth referred to as it presented from the hands of one of the fashionable dentists of Philadelphia. It is a typical case of pyorrhea. A married man in middle life—38 years—with hard, strong teeth, crowns large and irregular, roots not long and probably conical; marked cervical constriction, and pericemental tissue scanty. This gentleman is a smoker, but not given to excesses or vices; had brushed his teeth latterly with so-called "prophylactic" brush after approved methods, vertical movement.

As through this case, we look upon the horrible conditions in human mouths everywhere, in high and low born, king and peasant, and realize that they are wholly due to states and conditions of natural teeth, and so largely preventable, shall not we rise as witnesses for, and to advocate better things for neglected, untaught, suffering humanity?

But to return to this typical case of pyorrhea:—The broad-bladed scaler of the Smith set was passed back to the lingual surface of the second lower molar, where it was loaded with years of accumulations of calcic toxins, recent exudations of globules of pus, and gatherings of every variety of mouth debris. This conglomerate mass of revolting matter was held up to view, and the patient asked if he would like to handle it, to smell it, to taste it, to have it returned to the mouth. To all of these suggestions there was prompt declination. Then it was clearly explained that matter of similar nature is found on all untreated teeth, and that teeth are not on the outside of the body, *but inside the mouth;* that such conditions exist, not one hour in the day, but twenty-four hours of every day; not one day in the year, but three hundred and sixty-five days of every year; and further, this infectious matter on the teeth *in the mouth,* is in a temperature constantly maintained at 98.6° F., than which nothing could possibly be more favorable for germ culture, for imparting odors to the breath, nor for filling the lungs with infectious emanations.

From the mouth and teeth, septic matter is being conveyed directly into the gastro-intestinal tract, thence to the circulation, whence it may be deposited in any organ or tissue, and become the nucleus of serious chronic, systemic maladies. To emphasize the continual presence of this deleterious matter, the patient was told he could at any hour of the day draw floss silk between the teeth, or pass the finger over their surfaces, and discover most repellant odors; or he could recall the unpleasant taste in the mouth on rising in the morning; the fetid breath especially at night,—due not to stomach conditions, but to the stagnant, odoriferous matter on the teeth. Becoming dry, through inactivity of the salivary glands, the teeth send out into the breath of the sleeper poisonous emanations to do continuously a work of infection, unnoticed and unsuspected.

I would that it might be recognized by all, that sequences of the universal infection on the teeth in the oral cavity, are, in our present civilization, affecting the health of humanity to a greater extent than any other one physical condition. I could wish nothing grander or better for our profession, than that it should see and embrace the magnificent opportunity unfolded in oral prophylaxis to move forward and occupy this new field of untold benefits.

Dentistry, in these revelations respecting states of infection ordinarily existing in the human mouth, has opened a door for general etiological research of far-reaching importance.

The secrets of tooth-decay, in and of themselves, are of minor consequence in comparison with the systemic infections due directly to states and conditions of the teeth in the mouth. We venture to predict that recognition will ere long be made of the fact, that tuberculosis—that decimater of homes—and possibly other grave chronic disorders, can find no soil for development in a system kept from the contaminations of mouth-infection through a rigorous prophylaxis treatment from childhood.

We have abundantly proven that diabetes and many gastro-intestinal troubles are directly traceable to the mouth-infection of alveolar pyorrhea; also that many pharyngeal and tonsular inflammations, and many skin troubles, have their origin in infection in the mouth, due to septic states of neglected teeth. We know, also, that mental depression and hypochondria, and many of the perplexing nervous conditions in women, result from the same cause.

Dentistry alone has the power to relieve humanity from the plague of mouth-infection. When shall it command its own rightful place among the specialties of medicine?

NOT JUSTIFIED IN MAKING PERMANENT OPERATIONS.

We are not justified, except in rare cases, in attempting the more permanent operations for young children. In my opinion, aside from the reasons mentioned, the placing of the so-called permanent fillings in this class of cases is seldom indicated. We will considor some of these matters a little in detail. The average amalgam filling placed in young teeth is often of questionable value, speaking by comparison, and I would far rather resort to gutta-percha, the cements or tin in many cases. The fact that the cements are frequently not as durable as we or the parents might wish is more than outweighed by the saving of tooth structure, vital energy and temper of the patient. It is possible to do greater good with less suffering, to accomplish more with less wear and tear to both patient and operator with the cements than with any other material in a wide range of cases. When we come to the children of older growth cement must be used with great care and judgment, and I am free to say that it has been abused and misapplied to a distressing extent. In the bicuspids the greater danger lies, and yet this field is one that is capable of great accomplishments.—*Dr. C. A. Van Duzee, Summary.*

NEURALGIA.

I venture the assertion that a large share of the disorders, both trophic and painful, of the fifth nerve, have their origin in the teeth. I know that I am carrying coals to Newcastle when I tell you this, as you have observed many such cases. Let me urge those of you who treat diseases of the teeth to broaden your clinical investigation of your cases somewhat, as this is an important matter. I urge you to watch your cases in the next three or four years, and invesigate what trophic disturbances your patients may have besides those associated with the conditions you find in the mouth. Unfortunately, those of us who devote particular attention to the nervous system do not see many of these cases. I have seen but one in the past year. I had one woman, whose boy I was treating, who called my attention to an eczematous patch at the scalp margin. I said to her: "How are your teeth?" she replied: "I have been over to my dentist and have had a tooth treated on this side.' No doubt, there was a casual relation in this case. Those of you who see the teeth first should broaden your clinical investigation of the cases; see if there are any trophic disturbances about the face, if there is an erythema, a baldness, or tenderness which may be due to the conditions that are taking place in the mouth.—*H. N. Moyer, M. D., Register.*

SOME THOUGHTS ON PRACTICE.

In this paper I desire to present a few practical thoughts which have become apparent to me in two years' practice of dentistry, and in doing this I hope it may not seem egotistical in me to say I have found this pioneer field of work for women both profitable and pleasant; and desire first to reciprocate the courteous and kind treatment I have received from the profession.

I shall give a few hints by way of calling attention to some complaints I have heard patients make concerning other dentists.

I was impressed with these complaints in the beginning of my practice when a woman came to me for dental operations and stated that Dr. So and So had been her dentist and had given her satisfaction in a practical way. On examining the work I found her statement true; but she said he was an habitual cigarette smoker and while he was courteous and genteel, he must have been ignorant of the fact that the tobacco scent was ever present with him. Another complained of too much banqueting on the part of her dentist, and another said she thought a lady dentist would not suffer so much from over stimulated nerves and would not hurt.

It is a recognized fact that nature has given to woman delicacy of touch, cleanliness and gentleness of manner in a greater degree than to man; and to him a superiority in mechanical ability.

We all know that a certain amount of tooth structure having to be removed will create more or less pain, no matter how skillfully done; and the only satisfactory obtundent that I have found is perfect instruments.

And in regard to instruments, I believe the profession should take more interest.

If you will pardon me for mentioning this one special exhibit; several years ago the White Company was exhibiting a microscope for a scientific examination of the perfectness or defects of instruments, and at that time it had its influence with me, and has since become practicable.

When we come to the subject of children's teeth, a subject that has been largely discussed by persons of more experience than I have, I wish we could impress on parents the necessity of an educated dentistry.

Mrs. Walker of Pass Christian, Miss., has published a work entitled, "A Mother to a Mother." If this little booklet could have reached the home of all it would have done a great amount of good. Dr. H. H. Johnson of Macon, Ga., has lent a helping hand to this step, and others have added their influence.

The Georgia State Asylum has stationed a dentist for the purpose of looking after the inmates in a dental way; the army has added a dentist, and why shouldn't there be a requirement of applicants for public schools before being eligible to enter school to have their mouths looked after by a dentist, but of course here people will mention poverty.

We should, at least, be recognized in the State Board examination for public school teachers. Hygiene has its place in these examinations and why not our profession Hygiene, generally speaking, does not develop our profession with the ordinary public school teacher. They should know that poor masticulation leads to indigestion and this would bar the mind of the child and they never could develop its true power.

In working for children, of course, a dentist must win the confidence of the child before he can even get him to open his the facing, also the pins on bridge, and cemented to place. One of these facings had withstood wear and tear for three years.—*Dr. C. C. Bachman, Off. & Lab.*

A NEW USE FOR THE BACK-ACTION END OF THE AUTOMATIC MALLET.—For over twenty years I used one of these double-action mallets without knowing what the back-action end was for. Of course, when I bought it the smiling salesman told me it was to work around the corners; but I soon found this to be a pleasant fiction. I know now. I screw a foot-shaped plugger into that back end, and use it with straight pressure and no blow, and find it exceedingly useful as an aid in filling approximal cavities; especially where gold has to be pressed against enamel which is so liable to crack under the blow of the mallet.—*Dr. Stewart I. Spence, Summary.*

FORMALDEHYD.—This antiseptic, disinfectant, deodorizer and germicide, is now quite the general and favorite disinfectant, having in some quarters recently completely displaced the burning of sulphur. Various combinations have been recommended and are actually in use. A mixture of formaldehyd with soap with a little heat produces a disinfectant soluble in water and without odor. Mixing formaldehyd with ammonia produces an odorless combination which is an efficient deodorizer. The use of this combination is recommended by Dr. Alfred Martinet of Paris.—*Squibbs' Ephemeris, Cosmos.*

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result. Particularly if added to this the filling operations on the teeth, when necessary, should be intelligently executed. But, these teeth may be saved short of filling if oral prophylaxis of the vigilant kind is appreciated and employed. The fact is if we bestowed half, or possibly much less than half, the time on the teeth of children that we do on the polishing of their shoes, wonderful results would be obtained.

I am sorry that the larger child that blocks the sidewalk to be admired by the passersby does not know that a five dollar mouth would add more to her beauty than a five dollar hat.

The writer believes the more she observes, that the best services our profession will render to future generations will be in the line of prevention of disease to the teeth rather than reconstruction, in the saving of teeth.

The employment of strong escharatics, if I may employ the term to the use of nitrate of silver, will in much of the decay found in the teeth of children obviate the operation of filling, be made to bridge over, so to speak, the time and term of service of the deciduous teeth. This treatment is practically painless, preserves as nothing else seems able to do, encourages the timid patient into more resolute treatment when necessary.—*Florida Dental Society Paper, Dr. C. C. Collins, Atlanta, Ga.*

Tyree's Powder for Dental Surgery, By Starr Parsons, D. D. S., M. D., Washington, D. C.—I have used Tyree's Antiseptic Powder for the last four years, and have found it efficacious in the treatment of a variety of diseased conditions of the mouth and teeth. It can be used with good results in the treatment of abscess and pyorrhea alveolaris, and no dental surgeon can afford to be without it in his practice, as it can be used with safety and no bad after effects. In operating on necrosis of the superior and inferior maxillary bones, I have found it to give good results in washing out the pus with a syringe, containing a twenty-five per cent solution.

After operating on a patient particularly after extracting a tooth, when the dentist nearly always gets more or less blood on his fingers, it has been my custom to place some of the powder in the water and wash my hands with it to prevent inoculation.

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WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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TO THE SHAREHOLDERS OF THE SANITOL CHEMICAL LABORATORY CO.

BY PHILIP KELLEY, D. D. S.

Secretary Sanitol Stockholder Protective Association, 1472 Tremont St., Boston, Mass.

When the question of increasing the Capital Stock of this company from $500,000 to $1,000,000 was brought forward in October, 1903, a movement was inaugurated in Boston to find out something about the company and The Sanitol Stockholders Protective Association was formed with the general idea of combining every stockholder in an organization for representation in the company directorate, and mutual protection. This was the first and only organized investigation the company had ever been subjected to. Individual stockholders had tried repeatedly to learn something of its affairs but were put off with evasion or silence. Notwithstanding the fact that the company depended for its success upon the co-operation of the shareholders who had subscribed for small numbers of its shares of stock and thereby recommended its products and really made its business, the officers did not deem it necessary to send them a financial statement, although the Missouri law requires a financial statement and a list of stockholders to be sent to each stockholder each year, so they were kept practically in the dark regarding its affairs.

The inability to secure a full list of stockholders from the company restricted the movement and necessarily made it local. This year through two small ads. in the Dental Journals we succeeded in getting shareholders from all over the country.

As the representative of this Association I attended the special meeting of the company, December 19, 1903, when the capital stock was increased, being the only stockholder present outside of the officers of the company, and made as exhaustive an investigation of its affairs as was in my power. This I embodied in a general statement which I read at said meeting and at a meeting of the Boston stockholders on my return. So indignant were these stockholders at its disclosures that it was proposed that my report be published in the Dental Journals and it is worthy of note that the head agent of the company hung around Boston for over two weeks after this meeting running from one member of the committee to the other to find out what was going to be done. Referring to plan nine in the President's report of December 8, 1904, this is the *unaccountable opposition* developed in Boston.

CAPITAL STOCK AND CONTRACTS WITH STOCKHOLDERS.

Of the entire capitalization of the company of $200,000 every share was voted or distributed to the officers as follows:

Herman C. G. Luyties	15,000 shares
F. August Luyties	4,950
F. J. Rein	50
	20,000 shares
In November, 1898, although it was generally understood that these articles were assets of and belonged to the company, when the capital stock was increased to $500,000, the directors voted to purchase of Herman C. G. Luyties the trade mark and formulae on Sanitol Tooth Powder, Paste and Brush and he was paid in stock $300,000 or	30,000 shares
Total	50,000 shares

None of this stock was ever turned back to the company *so the company never had any treasury stock.* What stock did the thousands of shareholders buy on the cumulative dividend paying plan?

They signed a *direct contract with the company,* on the agreement both stated and implied, that these dividends while paying for such shares were to go into the treasury of the company for the expansion of the business. It is now stated that the company was acting as agent for the President in this.

How many shareholders would have bought this stock under these conditions?

These contracts the counsel of the company is now pleased to admit were "irregular," but that a large portion of these dividends were used in the business. The present and past condition of the company financially and the acknowledged limited expansion of the business do not bear out this statement. The contracts signed by such stockholders and now in the possession of the company, *have been tampered with* and the word "*agn't,*" has been stamped on them. The money receipts given to each stockholder at this time do not bear this stamp.

Your counsel is of the opinion that there is reasonable ground for an accounting and recovery of all these dividends by such shareholders.

FINANCIAL STATEMENT AND EARNINGS.

As no financial Statement has ever been submitted to the stock holders showing the earnings and expenditures the general circular issued December 3, 1900, gives the first line on the earnings of the company. It says: "A year ago our sales were about $6,000 per month. Now they are running at the rate of about $11,000 per month and our net profits are about $6,000 per month thus enabling us to declare a monthly dividend of one per cent ($5,000) on the entire capital stock or twelve per cent per annum, making your stock on a six per cent valuation worth $20 per share. Judging from the past we have every reason to believe that a year hence our monthly sales will be from $13,000 to $15,000 with net monthly profits of from $8,000 to $10,000." With a monthly output of

$11,000 we have a gross business of	$132,000
cost of production, etc., ...	$60,000
Net Profit	$72,000
Dividends declared	60,000
Surplus in 1900	$12,000

ing physician and patient but will attract the attention of all who have to do with the sick.

The eighth volume—*Doctors of the Old School*—is somewhat similar to "*A Book About Doctors*" and brings together a world of wit and humor as well as much useful information.

The ninth volume—*The Shrine of Aesculapius*—is a recital of various exploits, projects and experiences of the medical student and is extremely interesting and entertaining.

The tenth volume—*The Doctor's Domicile*—concerns itself with the home life of the physician, his wife, family and friends.

The eleventh volume—*A Cyclopedia of Medical History*—is probably the latest and most complete work on the subject of medical history published. Being brought down to date it presents attractions that cannot be found elsewhere.

The twelfth volume—*The Doctor's Who's Who*—presents a biographical sketch of living practitioners in all parts of the world selected on a basis of merit and perfect fairness to all concerned. It includes authors, editors, professors and others who through the merit of discoveries have attracted wide attention.

This work is one that every dentist will enjoy reading and its purchase will never be regretted.

The price, terms and other details will be found in the advertising section of this issue.

A MISTAKEN DIAGNOSIS.

By H. J. Jaulusz, D. D. S., New York City.

During my stay in the city of H—— last summer, I happened to make the acquaintance of a young man, L. M., whose sympathetic but very melancholy face attracted my attention. He had been a student at Yale and through his own efforts had been able to pursue his studies for some time, but the illness of his mother, when I knew him, had compelled him to give them up. His retiring disposition made it difficult to draw him into much conversation, but through my knowledge of his native tongue I was able with a little diplomacy to get intimate with him and finally to get from him the cause of his melancholy.

"My mother," he said, "is very sick; and my heart aches for

She is now a mental wreck undergoing treatment for ous disease at an institute for inebriates and insane at S—.

PART PAID SHAREHOLDERS RIGHT TO VOTE.

Full paid non-assessable certificates of stock were first delivered to part paid shareholders. These were afterwards called in and credit certificates sent out. Notwithstanding that notices of annual meetings, dividends etc., were sent to such stockholders, the counsel of the company stated that they had no actual voting power yet I was allowed to vote on over 700 shares of such stock against the increase and that vote is recorded in the Secretary of State's office. I will point out to you later the necessity of having this vote investigated.

INCREASED CAPITAL AND NEW FORMULAE.

It was stated to me by the counsel of the company that one-half of the increase was to be paid in cash. It was paid in by the Board of Directors voting to purchase of Herman C. G. Luyties the formulae and trademarks on

A Toilet Powder	$50,000
A Bath Powder	50,000
A Shaving Foam	50,000
A Face Cream	50,000
	$200,000
Said to be Paid in in Cash	50,000
Total	$250,000

Notwithstanding the fact that the formulae for any of these articles can be had in any Pharmaceutical Formulary and in all equity the company owned the trademark, a pliant board of directors purchased for this immense sum four articles that never had been tried, had no sale and the company has had to pay dividends to the President on this sum during the past year and the thousands of small stockholders were not even given the privilege of subscribing for any of these new shares. Is it any wonder that dividends to the small shareholders have been passed? The remaining $250,000 or a large portion of it is open to the same disposition if the stockholders do not combine for their protection.

so I requested her son to go to Dr. B. of that town to borrow several pairs.

I waited for him in the reception room. While pacing in my indignation and impatience, the head of the institute appeared again and I entered into conversation with him. To my question as to what was the matter with Mrs. M., "Ah, my young friend," he said, "I could hardly explain that to you, it is not easy to explain such things to a layman. Of course, you know that she imagines that she is unable to close her mouth. We are obliged to humor her, you know."

My anger was now perilously near the surface but controlling it carefully, I informed him that I was a dentist of experience and that in my opinion it would be advisable to extract the patient's teeth, explaining to him that the fillings were faulty and that the pulp had not been devitalized.

I had kept my temper with difficulty; the learned doctor lost his at once. "How dare you, sir," he exclaimed, "a foreigner, come into our institute under a subterfuge of visiting, to offer us advice?" I cannot say that I kept my temper any longer; I could not refrain from some plain speaking; but our discussion fortunately was cut short by the return of my friend. In his own tongue I warned him to say nothing about his errand, and leaving the doctor to his wrath, we returned to the patient's room. Knowing that there was no hope now of being authorized, and that there was no time to lose, I acted at once. I extracted the second bicuspid, first molar and second molar on each side of the lower jaw and several decayed upper back teeth. Of course, the pain caused the patient to scream, and first an orderly and then the doctor himself appeared. I had expected them, however, and prepared for them by fastening the door securely. I was able therefore to continue my work undisturbed to the end.

When the last tooth was out and she had recovered her nerve, "Now, madam," I said, "Close your jaws." She closed them in a frightened way, then more firmly, kept them closed for a few seconds—and without a word fainted away in her son's arms.

But it was not for long, and when she came back to consciousness and realized again that these years of agony and wretchedness were ended she was indeed a happy woman. She would kiss my hand and I had to prevent her kneeling at my feet in her demonstrative foreign fashion, but I confess I was a good deal shaken myself.

When the people outside were admitted, they had with them a county sheriff to take me in charge. I was in no mood for excusing myself; a row ensued; my temper was not under con-again a wise management would have had agents calling on the profession as every company has, and representatives at the Dental Conventions. Yet this part of the business was apparently neglected also.

Fourth. *Reaching out for new Shareholders.* On the original plan no shareholder was to be allowed more than twenty-five shares. Had this been carried out a large portion of those, it is now expected to take in on the new increase, could have been secured and the company would have had the benefit of their co-operation during the past four or five years. Instead of that the same shareholders were sought out repeatedly to buy shares for cash and many were induced to put their hard earned money into it on the representation of a twelve per cent earning stock. In the face of reported increased earnings dividends were declared as follows:

1901	12 per cent.
1902	9 per cent.
1903	9 per cent.
1904	6 per cent.

Vote Cast at Annual Meeting, December 7, 1903.

Herman C. G. Luyties	15,343	shares
F. August Luyties	2,848	"
R. G. Richmond	847	"
Geo. A. Bowman	125	"
R. E. Desmond	1	"
	19,164	shares

According to this vote the officers had lost control of the company, yet when the Special Meeting was held December 19, 1903, and the capital increased the following vote was recorded with the Secretary of State.

Total Authorized and voting shares	50,000	
" represented in person and by proxy		42,230
" " " "	33,239	
" " by proxy	8,991	
" not represented		7,770
Total votes cast		27,551
" present and not voting		14,679
" not present		7,770
Total in favor of resolution	26,288	
" votes against "	1,263	

The above vote could not have been figured out in this way without the President assuming the voting right on shares held by part paid shareholders. *He did not possess that right.* This vote should be investigated and set aside if proven to be wrong and the general stockholders have the opportunity of securing control of the business.

FINANCIAL STATEMENT DECEMBER 1, 1903.

Resources,	
Cash on hand, raw materials, finished products, machinery, fixtures, accounts receivable, Trade Marks, copyrights, *and other valuables*	$631,676.07
Liabilities,	
Capital Stock, Accounts payable	$501,578.73
	$130,097.34
Surplus and undivided profit	

FINANCIAL STATEMENT DECEMBER 1, 1904.

Resources,		
Trade Mark, Formula, Copyrights, etc.,		$800,000
Mdse., as per inventory, (Mchy., appliances, and fixtures		18,390.55
Open Accounts		7,874.40
Cash on hand		11,762.30
Bills receivable		23,106.50
		$861,133.75
Liabilities,		
Capital Stock Issued	$785,200.00	
Bills payable	1,795.71	
		786,995.71
Surplus,		$74,138.04

In the statement of December 1, 1903, $100,000 is added to the resources of the company under the heading—"other valuables." In the statement of 1904, this $100,000 has disappeared and the same amount is added to the price paid for trade marks, etc., as increased value. What did that $100,000 represent and where has it gone? In the face of it the statement of 1904 represents a deficit of $25,862.06 instead of a surplus.

Facts are facts and high sounding circulars on the benefits of co-operation do not take the place of the dividends the the stockholders are justly entitled to and should receive.

The number of new stockholders taken in the past year is ridiculously small considering the fact that eleven "bright and intelligent" men have been soliciting for new ones. Indeed reports from different quarters indicate that they have been as active in trying to sell more stock to old stockholders as to new ones. How this method can expand the business is hard to determine yet this has been the policy of the management in the past. Stripped of all surplus, the earnings are being used for development expenses instead of the funds that should be in the treasury, and the company is paying dividends on $200,000 of new formulae.

The thousands of small shareholders whose shares of stock are about paid up, many are fully paid, made a contract in good faith with the company. They are entitled to and can demand an accounting of all the dividends declared on the shares they contract for.

Some of the shareholders have suggested an organized movement in each city or dental society for the purpose of combining all the stockholders. If this plan is carried out our attorney is ready to protect your interests.

DISCOLORATION OF GOLD FILLINGS.

Dr. P. B. Engel.

Discoloration of gold fillings even in the early days of the use of the material, attracted the attention of the profession, and various reasons were offered for this, which today are still recognized causes. Among these may be mentioned improper cavity preparations, including insufficient removal of decay and insufficient marginal extension. In the former defect, the gold next the floor and cavity walls being necessarily not well condensed, becomes very absorbant to the products of the progressing caries under it. This process extends to the margins of the filling, and a discolored edge results, due to the penetration into the substance of the filling of the products of the carious process. In the latter defect, the failure to extend the margins not only does not hide the filling completely and prevents the light from being reflected directly forward from it (I am referring particularly to approximal fillings in the anterior teeth), but also by its very position prevents access to all cleansing agents—the saliva, the lips, and the tooth brush—and has not the appearance of the perfect gold filling. Another frequent cause is insufficient surface condensation. The operator's attention may be diverted while condensing the last layers of gold, and he fails to obtain the proper finish. He burnishes, polishes, does not dare to make new imprints with the mallet into the already flush surface, and the filling lacks that smooth, glossy polish of the perfect gold filling. Such a surface as well as the dull pumice-stone finish, is very inviting to discoloration. Still another cause is the incorporation into the gold of foreign substance during the insertion of the material. This may happen in connection with combination fillings. Scraps of tin, amalgam or metallic flakes from the instrument used will in time mar the surface of a filling. Here it may also be mentioned that excessive burnishing with steel instruments tends to discolor gold fillings. Combining tin with gold to fill at the cervical margin or the major part of the cavity, or combining amalgam with gold—in all such combinations, if extreme care be not taken in finishing, the baser metal will be rubbed on or impregnated into the surface of the nobler metal. Even the very fact that a large mass of amalgam is in contact with a small mass of gold may, in the course of time, produce a slight discoloration in the gold. Furthermore, there may be a possibility that the fineness of the gold used is at fault, though this can hardly be the case at the present day. The action of sulfids, either taken in with the food or produced chemically in the mouth, is another reason for discoloration, and these agents are invariably present to a greater or less extent in all mouths. The mouths of febrile patients, as well as some of those in health, are often found to be in an exceptionally dry state. Such a state is very favorable to the action of chemical agents and organic forms of life, and a deposition takes place which is a common cause of discoloration.—*Headlight.*

USE OF THE FERRULE IN CROWNING.

By H. C. Register.

I do not hesitate to say that there are as many, if not more, roots destroyed by crowning than are saved by it, because of the production of irritation, which induces gingivitis leading to pericementitis and the other ills that follow irritation. The ferrule should be used with extreme care. I very rarely, except in exceptional cases, let it run up above the gum at all. I prefer a plate of gold or platinum well fitted to the face of the root. Through this is passed the post of a crown, which has its labial edge nicely adapted to the labial part of the plate, while the lingual edge of the porcelain is well ground away, leaving a space between the crown and the plate. After being satisfied that everything is as correct as one can make it, simply catch it on the inside or outside with a quantity of phosphate of zinc. If using a gold plate, fill in the space with low-fusing porcelain body; bake it in the furnace and it comes out a perfectly solid tooth with a little gold or platina termination, and the adaptation is exact. A plain plate tooth may be used if preferred. When in position on the root you have not got the ring or ferrule under the gum to act as an irritant. The festoon of the gingiva will become normal. The chief use of the ferrule is to prevent the root from splitting.—*International.*

THE BAND FOR PRESERVING THE TEETH.

DR. W. FARLEY.

Dentistry, insofar as concerns the preservation of teeth, by means of "filling" is a failure in the field of the back teeth when the latter are attacked on a line with or below the gum. It is estimated that the life of an amalgam filling will average four years. Also that four-fifths of all filings are amalgam. Amalgam, then can not be called a permanent filling. It is not serious enough for the pretenses of a profession. It is more a barber's material when employed in such cases. This will not do. Let us spend less time in discussing ethics and more time in discussing the preservation of ordinary teeth, which, heretofore, have evaded our boasted skill. If I were addressing a room full of students, I would tell them that a tooth which is decayed below the gum margin cannot be preserved with a plastic filling, seldom with gold, but, as a rule, always with a band. Any careful dentist can crown such teeth and preserve them, but this may be going too fast on his part; and, besides, is it always necessary to crown such teeth? I emphatically state that it is better to crown them outright than to fill them, but there is, however a compromise between crowning and filling, and this compromise is effected by means of a band. Although requiring rather mature skill, such as follows from prolonged must be removed and the gag applied before narcosis. Hold the face piece at a little distance from the face, so as to accustom the patient to breathing the vapors of narcotile without discomfort, and gradually bringing the mask closer to the face. If after 20 or 30 seconds the patient is allowed to breathe three or four inhalations of pure air, complete anaesthesia will be reached more quickly than by continuous administration of the anaesthetic and the patient is less subject to undergo a period of excitement.

The danger of asphyxia and cynosis,, brought upon by too rapid condensed vapors, are avoided, as the patient will get sufficient air through the cotton in breathing.

Very little is known at the present day about the way anaesthetics are acting upon the system, and on what part of the organism their action is chiefly manifested.

It is evident that anaesthetics act by absorption through the respiratory and circulatory systems. The protoplasm and hematine undergo a certain change, and all living cells are paralyzed, rendering what we may call sensitive life in a latent state of lethargia.

Violation and sensation are abolished, and the brain does not perceive any psychic or traumatic change that the body is undergoing. Anaesthetics may be described as drugs capable of producing three different successive phases: Stimulation, depression and paralysis of mechanism.

These different states are more or less manifested according to the kind or quantity of anaesthetic employed, these phases corresponding with three different degrees or stages of anaesthesia, it will be easily understood that: First, If stimulation is exaggerated, excitement and nervous disorder will follow. Second, If the anaesthetic causes too great depression, cardiac and circulatory troubles are likely to occur. Third, When the state of complete paralysis reaches both circulatory and nervous systems through too long administration or over-dose of anaesthetic, syncope, failure of the heart, and finally death will occur.

It is therefore evident that an anaesthetic to be void of any ill-effects must produce these three different phenomena gradually, without any suddebn transition, and without fear of giving an overdose. This can be obtained if the product is pure, of easy absorption and elimination, and with definite and regular action on the system, such is the case with narcotile.

The general effects of narcosis produced by narcotile nearly resembles those of sulphuric ether, much more speedy than chloroform or nitrous oxide gas. Narcotile acts upon the sensory nerves and spinal centers, than upon the medulla oblongata, know that many dentists use just the roll of wax without any base plate, but I am sure we will all admit that a more accurate bite can be obtained by using a base plate, and it is a difficult operation in many cases, under the most favorable circumstances. Modeling compound makes a very rigid base and is quickly and accurately adapted to the model, being much more easily worked than gutta-percha. It hardens very quickly, and the edges can be easily trimmed and smoothed with a knife, giving us a trial plate that fits the mouth perfectly and does not soften or change shape from pressure.

We are often called upon to repair a rubber plate that is so badly broken that it is a question whether a new plate would not be preferable, the question of expense to the patient, or time, being the only objection. The articulation being perfect, an entirely new denture can be made with very little trouble and almost as quickly as we can repair the old one, by the following method: Cement the pieces together as accurately as possible and insert in the lower half of the flask, keeping the plaster even with the edge of the rim of the plate. Oil the surface of the plaster, rubber and teeth, and build more plaster around the outside of the denture and up even with the occluding edges of the teeth; when this is sufficiently hardened, oil this surface, place the other half of the flask in position, fill with plaster and allow to harden. The flask will separate very easily, leaving the plaster rim around the outside of the teeth, which we next remove and place in the upper part of the flask. By heating the old denture the rubber can be easily removed, leaving the impression of the palatine portion of the mouth perfect. Remove the teeth from the old denture and place in the impressions in the upper part of the flask and proceed to pack the rubber as in any other case. When finished, we have an entirely new denture with comparatively little work.

In bridge work we often wish to confine solder to one particular place and not allow it to flow over the adjacent parts. If you wil paint the parts you wish to protect with yellow ochre water color, it will prevent the solder flowing over these parts; whiting will also work the same way, but when the heat is applied the whiting flakes off, which is not the case with the yellow ochre.

I have received a great many letters asking me for my experience with the Hurd Twentieth Century Gas Inhaler, and, as a recent inquiry was from a member of this Society, a few words on the subject may be of interest to the rest of you.

I have used the inhaler for over three years, and consider it the best method of administering gas I have ever seen. I have

EROSION.

A brief history of the study of erosion may be of interest.

In the year 1778, J. Hunter recorded observations of a case of erosion, this being probably the first time attention was specifically called to it.

In 1843, Dr. E. Parmly observed the erosion upon a set of human teeth, worn upon an artificial base.

About 1873, Dr. C. R. E. Koch, of Chicago, wrote an exhaustive paper on the subject, saying: "At this time the most general belief, undoubtedly, is that the disease is a process of chemical analysis.

Dr. L. G. Noel, of Nashville, 1875, wrote that he had observed erosion as one of the results of chronic rheumatism.

Dr. R. Finley Hunt, 1879, expressed the opinion that erosion was caused by an alkaline condition of the oral fluids.

In 1881, Dr. Wilbur F. Witched said that erosion unquestionably required "a vital condition of the tooth structure for its developement," and that he had never seen it occur in a devitalized tooth. This opinion was disputed and discussed until finally settled in 1892, by Dr. J. Morgan Howe, who observed the erosion of a pulpless incisor together with similar effects on other incisors having living pulps.

Dr. E. C. Kirk, in a paper read before the First District Dental Society of New York, in 1886, took the position that erosion was a constitutional disorder with a local manifestation and that the local manifestation, and that the local expression and that the local expression was the solvent action upon the tooth structure of an altered mucus from certain of the buccal mucous glands. He, however, gives the credit of priority to Dr. James Truman.

Much was written on this subject without advancement, until Dr. E. T. Darby, 1892, stated that erosion was due to an excess of uric acid in the blood. Dr. S. G. Perry corroborated this assertion the following year in a paper read before the New York Odontological Society. The discussions that were then brought out gave strong support to this theory.

In March, 1899, Dr. A. C. Hart in a paper says of erosion: "From my clinical experience I am inclined to believe erosion results from the removal of both the organic and inorganic matter from the enamel and dentin.

"From my experments I believe this is partially accomplished by the saprophytes and other fungi. I have found evidence

ZINC OXYCHLORID FOR ROOT-CANAL FILLING.

DR. C. W. STANTON.

I believe the oxychlorid fills the canal more perfectly and remains unchanged better than any other material. No one, to my knowledge, has ever claimed for the gutta-percha that it had any antiseptic or germicidal quality any more than so much wood pulp. Hence the mixing with it of various medicinal agents such as carbolic acid, aristol, corrosive sublimate, hydronaphthol, formalin, and nearly every agent used by us. Zinc oxychlorid is an antiseptic, and has been known as such from the beginning. For forty years it has been known as the only material which will absorb the gases from the root-canals and itself remain unchanged. It is the only antiseptic material yet found which we can use as a filling material in the root-canal.

What is the condition found when we need a canal filling? If it be a case of recent devitalization, we have by means of hydrogen dioxid the main portions of the pulp removed, but with the contents of the dental tubuli practically intact. In an old case, especially where pus has been present, we have the dental tubuli saturated with germs. In my own practice the fresh cases are filled with oxychlorid as soon as the foaming ceases from the hydrogen dioxid. The second class are treated with Black's "1, 2, 3," about three dressings of two days each, then filled. New trouble with these cases after filling is really no part of my trouble in dental practice. I make no claim to infallibility, but this is one of the things that does not annoy me; and yet this method has been my reliance for over thirty years.—*Ex. Cosmos.*

A METHOD OF PLACING PORCELAIN FACINGS IN GOLD BICUSPID CROWNS.

DR. F. L PLATT.

The buccal face of a soldered or seamless gold crown is cut out, leaving a sufficient band at the cervical border to insure strength and rigidity when the crown is finally cemented in place, and an ordinary cuspid facing is ground to approximately fit the opening. This facing is then backed up with thirty-two gauge pure gold, and should fit accurately, leaving a slight margin of the backing projecting all around the facing.

The facing and backing are then placed in position, a little pad of asbestos paper is placed over the facing to protect it from contact with the flame of the soldering lamp, and crown and facing are wired together with two or three turns of binding wire.

A little borax flux and small pieces of solder are then placed on the pins, which should be cut off short, and around the margins of the opening, and the whole crown may then be heated and soldered, without investment, over a Bunsen burner or alcohol lamp.

Enough solder should be used to stiffen the backing slightly and restore the contour of the crown so the facing will be flush with its buccal surface when finished.—*Gazette.*

HOW TO PUNCH RUBBER DAM.

DR. D. E. MCCONNELL, GASTONIA, N. C.

There are many rubber dam punches on the market but none that I have tried give the results that I get from the handle of a Donaldson broach and a knife used as follows: Lay down across fingers of left hand, holding it with thumb, select a broach handle with a rounded end and push it between the dam over handle, then holding the knife at right angles to handle touch the dam where it is stretched on side of broach and the piece snaps out, leaving a hole exactly round with edges perfectly smooth. With a little practice holes any size may be made. The nearer you cut to the end of the handle, the smaller the hole, and the further from it the larger.

ORAL HYGIENE.

By Albert J. Wright, D. D. S., Brooklyn, N. Y.

Oral hygiene gives a theme for practical thought which is of great value to the dentist and we have no better antiseptic for encouraging oral hygiene than Glyco-Thymoline. I always instruct my patients in the daily use of this solution and urge upon them the importance of such a measure. The dental profession to-day is not only caring for diseased conditions of the oral cavity, but it is giving careful consideration to prophylactic treatments which will arrest or prevent disease. To maintain a healthy condition of the mouth and its secretions I find Glyco-Thymoline invaluable. It will inhibit the propagation of bacterial life and neutralize destructive acids. The continued use will also guard against attacks of acute inflammatory diseases such as tonsilitis, diphtheria or catarrhal pharyngitis. Another fact I have noticed; the daily use of Glyco-Thymoline as a mouth wash means that TOOTHACHE IS MADE A THING OF THE PAST. Why? Because Glyco-Thymoline through its peculiar exosmotic property rapidly depletes any existing congestion, stimulates capillary circulation, checking or preventing inflammatory processes. Without *inflammation* there can be no *toothache.*

BOOK REVIEWS.

A MANUAL OF MECHANICAL DENTISTRY AND METALLURGY.—By George W. Warren, A. M., D. D. S., Professor of Clinical Dentistry, Pennsylvania College of Dental Surgery; author of a Compend of Dental Pathology and Dental Medicine, etc., second edition, revised and enlarged. Philadelphia, P. Blakistons Son & Co. 1905. Price, net $2.00.

In getting out the second edition of this work the author has revised the text in accordance with present day technic, and has increased its size sufficiently to incorporate new material demanded by existing methods of teaching, and to broaden its scope without materially altering the form which has proved so generally acceptable.

The student will find it a sound and conservative guide in his study of the subjects considered. Obsolete methods have been eliminated, and the multiplication of theories avoided, and it will be found to be in every way a convenient up-to-date every day working book.

MERCK'S 1905 MANUAL OF THE MATERIA MEDICA. A Ready-Reference Pocket Book for the Physician and Surgeon. (Published by Merck & Co., University Place, New York.)

The third, or 1905, edition of MERCK'S MANUAL is a compact little volume, stored with such information—revised to date—as gained for its predecessors the title "a valuable pocket reference-book for the active practitioner." The publishers sought the aid and suggestion of many physicians in compiling the MANUAL, which contains some notable departures from and additions to the previous issue.

AMERICAN ALKALOMETRY, Volume IV, a Digest of Clinic Teachings for 1902–1903. Editors, W. C. Abbott, M. D., W. F. Waugh, M. D. The Clinic Publishing Co., Chicago.

This is a large book of some 725 pages and includes the best articles which have appeared in the Alkaloidal Clinic during the years 1902 and 1903.

It is both interesting and instructive and will repay study.

A BOOK ABOUT DOCTORS, By John Cardy Jeaffreson—Being Volume IV of The Doctor's Recreation Series. Pages, 516. Silk cloth. Price, $2.50. Illustrated. The Saalfield Publishing Co., Akron, Ohio.

This is the fourth volume of the Recreation Series and it is the best so far issued. The writer has collected in a most readable and attractive form the best of those medical Ana that have been preserved by tradition or literature. In so doing he has combined and classified old stories, and at the same time selected the materials with such care that the work while affording amusement to the leisure of doctors, contains no line that would render it unfit for the drawing room table. The author states that much of the matter has never before been published but after being drawn from a variety of manuscript sources is now for the first time submitted to the world. It is at any rate one of the most interesting books we have had the pleasure of reading for some time.

PUBLISHER'S NOTES.

In the treatment of fungi of the mouth phenol sodique diluted 1 to 5 and used as a mouth wash is an excellent fungicide. After using this preparation a clean, healthy and refreshed taste remains. Phenol sodique prescribed—diluted 1 to 10—for a mouth wash, to be used for some days before working on the teeth, will often be the means of saving time and work.

After extraction the hemorrhage is stopped and pain greatly lessened by saturating a pledgett of cotton with undiluted phenol sodique and inserting into the cavity. Instruct the patient to wash the mouth several times with phenol sodique—diluted 1 to 3—after leaving your office.

"Sal Hepatica" is a scientific combination of sodium and lithiu mphosphates with the laxative salts of the "Bitter Water." It is very pleasant and most efficient in uric acid troubles and makes an agreeable effervescent drink when dissolved in water.

Sal Hepatica is being extensively employed as an eliminant of irritating toxins in the alimentary tract. Unlike most saline laxatives it is not in the least depressing but on the contrary is a physiological tonic. Sal Hepatica is one of the very few laxatives that are permissable in any form and in all stages of kidney diseases, for it is positively non-irritating even when exercising a dierutic and depurating action. Samples from Bristol-Myers Co., 277 Greene Ave., Brooklyn, N. Y.

NATIONAL DENTAL ASSOCIATION.

Ninth annual session to be held in Buffalo, N. Y., July 25th to 28th, inclusive.

The Hotel Iroquois has been selected by the local committee of arrangements as headquarters, where all general sessions of the association and of the sections will be held. The clinics will be held at the rooms of the dental department, University of Buffalo.

Rates at the Hotel Iroquois are: single room per day, $1.50, $2.00 and $2.50; rooms for two persons, $3.00 and $4.00; single rooms with bath $3.00 and $3.50; rooms with bath for two persons, $5.00, $6.00, $7.00, and $7.50; all rooms on the European plan.

The usual rail-road rate of one and one-third fare for the round trip, certificate plan, has been arranged for by the executive committee.

All pay full fare going, taking proper certificate therefor from the ticket agent, which when properly vied at the meeting, entitles the holder to return for one-third the regular rate.

Tickets going may be purchased from July 20th to 26th and are good returning to and including August 2d.

Both the general officers and those of the sections have been working hard to provide an interesting and instructive program and a large attendance is expected.

A. H. PECK, *Rec. Sec'y*,
92 State St., Chicago, Ill.

The 46th Annual Meeting of the Northern Ohio Dental Association will be held June 6, 7 and 8, at Gray's Armory, Cleveland, Ohio.

This is not only one of the oldest, but is one of the best attended meetings in the country. This year, the program is one of unusual strength and interest.

MAKING A MATRIX WITH GUM CAMPHOR.

Dr. Charles Channing Allen, Kansas City, gave a clinic showing a method original with him of making a matrix for porcelain inlays. The vital part of the method consists in filling the matrix while making with gum camphor and actually swaging it, as it were, in the mouth, with this material, instead of burnishing it to place, as has been the custom, with chamois skin, cotton, spunk, paper, or other material of a similar nature. After the cavity is prepared, a piece of gold or platinum foil of proper size for the matrix is placed in position, then slightly burnished to place with any material handy, such as spunk or chamois skin, but no particular attention being paid to adaptation, except in the general way.

When the cavity is outlined in a general way, Dr. Allen proceeds to fill it with gum camphor, taking a small lump of the proper size and burnishing it into the cavity with pressure, using a proper burnisher, usually a flat instrument.

The gum camphor is stiff enough to require a sufficient pressure in putting it to place to swage the gold or platinum foil to all parts of the cavity walls and is firm enough to admit of all handling necessary and still absolutely retain its shape.

Dr. Allen burnishes the camphor down carefully and works out this camphor filling with as much detail as though he intended it for a permanent filling, thereby securing a perfect edge around his matrix. The translucency of the gum camphor aids materially in attaining this result.

But the best part of this whole proceeding is the ease and rapidity with which the camphor can be removed. After Dr. Allen has made his matrix as outlined, he invests it in asbestos fibre in the ordinary way with alcohol and sets it afire, by the time the alcohol has burned up, the camphor has entirely disappeared, leaving an absolutely clean matrix with nothing whatever to discolor or contaminate the porcelain. If it is not desired to invest the matrix, simply ignite the camphor with a match-flame and it burns up in an instant with the above results. It is usually, however, best to add a drop of alcohol before burning.—*Brief.*

FUSIBLE METAL.—Following is the formula for a fusible metal, fusing at about 165 degrees. This metal will not stick to the gold when heating it to separate the fusing metal from the gold crown in making seamless crowns. Cadimum, 26 5/10 grammes; bismuth, 94 8/10 grammes; lead, 38 8/10 grammes; tin, 40 grammes. Should a film of metal adhere to the crown, chill the crown in water, when the metal can be pealed off without trouble. The crown should be finally boiled in dilute nitric acid to free it from all contamination.—*Dr. Charles E. Post, Gazette.*

BREAKING OF A VULCANITE DENTURE.—Another fertile cause of the breaking of a vulcanite denture is not recognizing the fact that each natural tooth on the model makes an indentation in the rubber. Now, if one when molding the wax to such a model should get it attenuated or thinned over the convexity represented by the tooth, then one has a weak spot that does not require much of a strain to snap the case in halves; so that too much care can not be exercised in keeping the contour of the model so that the ruber plate may present as nearly as possible an even thickness.—*Harry Rose, Jour. Brit. Dent. Assn.*

GUTTA-PERCHA FOR ABRASION.—In cases of moderate exposure to abrasion I have had great success with high heat gutta-percha as a filling material. In the preparation of the cavity avoid long bevels and obtain as well defined undercuts as the case permits. Disinfect the cavity with hydronaphthol, dry thorougly with hot air, and line with a compound of the resin of Pinus sylvestris (fiddle-bow resin) and alcohol---4 drachms of the former dissolved in 2½ drachms of absolute alcohol. Line cavity with thin cement and insert the gutta-percha before the cement sets, taking care not to use too much gutta-percha—preferably insert in small pellets—and finish with warm instruments.—*R. B. Colvin, Berlin, Pa.*

REPLACING A BROKEN FACING ON A BRIDGE.—He first removed all pieces of porcelain from the pins on the bridge, selected a facing of size and shade desired, ground the pins down to the surface of the back, and then with a copper disk wet with water and covered with carborundum powder, put a groove in the back of the facing to admit the pins still on the bridge with slight undercuts on each side of the groove. He finally cleaned good. I have done this a few times with an upper plate, but if there is any undercut it is hard to separate, but where there is no undercut, it is an easy way to remedy an upper plate, after the plate gets loose, from absorption of the alveola process.—*Dr. J. T. Phillips, Livingstone, Ala.*

GOLD INLAYS.

For buccal cavities of bicuspids and molars, where the cavities extend near or a little below the gum margin, inlays are one of the best fillings, considering the location.

Sometimes it is very difficult to fill such cavities with gold foil, where an inlay will be successful. Very much depends on the preparation of the cavity in all inlay work, the walls should be cut straight with no undercut, and with a smooth orifice.

When the cavity is in readiness, cut a piece of thin platinum foil of sufficient size, that after being burnished in to the cavity the platinum will extend over the border of the cavity. Remove the platinum and flow in a little 22-k. solder, just enough to stiffen the platinum, then place in the cavity and burnish well to all parts, then remove the platinum matrix and fill with 22-k. gold solder or pure gold.

Sometimes it is well to invest the matrix, but in most cases the inlay can be completed without investment.

When the surface of the inlay has been dressed down, finished and made ready for insertion, dry the cavity and fill with properly prepared cement then drive the inlay home, and success will follow.—*Dr. Gustavus North, Cedar Rapids, Iowa.*

GIVING GAS.

With reference to collapse, I have never had such a case in my practice. One can never tell how soon he will have. I keep a hypodermic syringe ready, with 1/60 of a grain of strychnia, and repeat, if necessary. Then I have globules of amylnitrite, aromatic spirits of ammonia, etc. I would resort to artificitl respiration, and I would use hot salt water enema per rectum or other measures for resuscitating a patient, if necessary. I have never had occasion to refuse to give nitrous oxide to anyone, but I would absolutely refuse to give it to a person who was an habitual user of cocaine or morphine. I have had a few patients to whom I have given anaesthetics for operations, and some of them have broken up the furniture in the office on two or three occasions. I learned later that they were cocaine or morphine fiends. So that I do not want any more of that kind of patients. As a rule, they are the biggest liars on earth, and you will find that out when it is too late. I would not give nitrous oxide gas to habitual alcoholics. I would rather have them take several drinks, and then operate on them, without giving any gas.—*Dr. F. M. Richardson, Review.*

BOOK REVIEWS.

Oral Pathology and Therapeutics. By Elgin Mawhinney, D. D. S., Professor of Special Pathology, Materia Medica and Therapeutics in the Northwestern University Dental School, etc. 233 pages. Publishers, Consolidated Dental Mfg. Co., N. Y. Price, cloth, $5.00 net.

This work is a systematic presentation of the subject from the standpoint of modern therapeutics. The management and treatment of oral diseases is comprehensively discussed, accompanied with illustrations, plainly portraying a practical course to pursue in all operations of this kind. The book is a reliable guide for the recognition, treatment and prevention of oral diseases.

As a text book for students in dental colleges it is undoubtedly the best in its class.

The Dental Family's Friend. By Dr. F. S. Miller, Wausau, Wis. Pages, 415. Cloth. Published by the author. Price, $1.75 net.

This is a book designed for the patient but it is one that can be read with profit by the dentist himself.

The work is divided into five parts, the first part covering the formative period of the teeth, both before and after birth. The second part consists of the uses of the teeth, the teeth and surrounding parts, the teeth themselves. The third part covers diseases or abnormal conditions of both the teeth and surrounding tissues. The fourth part tells of the work usually done by the dentist, and the fifth part covers the relations between dentist and patient.

The work should be a valuable one to the layman desiring correct information concerning the proper care of the teeth, and the busy practitioner will find it a good book to use in refreshing his own mind on many points.

Eye, Ear, Nose, and Throat Nursing. By A. Edward Davis, A. M., M. D., Professor of Diseases of the Eye in the New York Post-Graduate Medical School and Hospital, and Beaman Douglass, M. D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. With 32 illustrations. Pages XVI-318. Size, 5½ x 7⅞ inches. Extra Cloth. Price, $1.25 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

While written primarily for the use of nurses, students and general practitioners will find this book of great assistance also.

It is a guide for the intelligent care and nursing of the various diseases of the eye, ear, nose, and throat and instructs the nurse as to her exact duties during and following operations upon these organs.

Antisepsis and asepsis have received particular attention, the methods of preparing the numerous antiseptic and sterile solutions and dressings have been given in detail, while the various remedies required, their preparation, sterilization, and exact method of application have been considered fully.

A brief outline of the anatomy and physiology of the eye, ear, nose and throat has been given, and taken altogether the work is one that dentists as well as nurses and physicians can read with profit.

The Doctor's Window. Poems by the doctor, for the doctor, and about the doctor. Edited by Ina Russelle Warren, with introduction by William Pepper, M. D., LL. D. Volume Five of the Doctor's Recreation Series. The Saalfield Publishing Co., Akron, O., 1904. Silk Cloth, $2.50 per volume. Half Morocco, $4.00.

In reviewing this volume we can best repeat the words of the Philadelphia Press: "No anthology has ever had a more attractive setting than this; paper, type and binding are all that
uld be desired. The editor has made a selection rather than
ollection and yet it would be difficult to point out the omis-
ns of any set of verses that ought properly to have been in-
ded; still harder to indicate anything in the book that the

editor might exclude in order to make place for such omitted poems. The practicing physician must needs find amusement and inspiration in the poetry of his profession, grave and gay; the general reader will discover excellent precepts for the preservation of health and can peruse few of the selections without gaining a deeper sympathy with and admiration for the followers of Aesculapius."

The Miracle of Life. By J. H. Kellogg, M. D. Good Health Publishing Co., Battle Creek, Mich. 1904. $1.50, net.

In reviewing this work we cannot do better than quote from the preface.

"Life is a miracle. Every manifestation of life whether it be the living mote which dances in the sunbeam, the leviathan which sports in the deep, or man himself, the paragon of animated things, is an evidence of the operation of an infinite intelligence whose all-pervading life is the life of man and of every living thing, a miracle working power which is every moment working in the creation the support and the protection of all things endowed with life.

It is to the study of this miraculous power especially as manifested in man that this volume is devoted."

Dr. Kellogg says that the blight of physical, mental and moral decay has fallen heavily upon the human race, that insanity, epilepsy and imbecility has increased three hundred per cent in fifty years and that in fifty years more at the present rate of increase it will constitute one per cent of the entire population.

This he claims is the natural result of perverted habits and the cultivation of abnormal appetites—gross transgression of the laws of man's being, and which have come to be almost universal.

It is the hope of the author thatthe work will serve as a beacon light to those who are seeking a better way of life and with the same hope we commend it to our readers.

The Man Who Pleases and the Woman Who Charms. By John A. Cone. Pages, 121. Cloth. Hinds, Noble and Eldredge, 31 W. 15th St., New York City. Price, $.75.

The title of the first chapter of this little book is "The Man Who Pleases," and in it the author discusses some of the personal elements to success as the ability to converse well, personal neatness, taste in dress, tact, etc., etc.

It should be an interesting chapter to young dentists and many old ones as well.

Other matters covered in the book are Conversation, Good English, Tact in Conversation, The Compliment of Attention, etc.

BRILLIANT RECORD OF A NEWSPAPER MAN.—The success which has attended William E. Curtis, the famous correspondent of THE CHICAGO RECORD-HERALD, is rarely attained by newspaper writers. Beginning his career in Chicago in 1872 as reporter, he rapidly rose to the position of managing editor. He resigned that position on receiving a government appointment as secretary of the South American commission. Mr. Curtis traveled extensively in Central and South America, while in this position, producing several popular volumes as the result of his literary labors. Afterward co-operating with Secretary of State James G. Blaine, Mr. Curtis organized the work of the bureau of American republics, with the result that he was placed in charge of that organization, and at the World's Columbian Exposition he distinguished himself by his labors as the executive head of the Latin-American department. As correspondent of THE CHICAGO RECORD-HERALD Mr. Curtis' travels have carried him into every section of the United States as well as into all quarters of the globe. His China and Japan letters were published in book form; likewise his letters from England, Germany and France, as well as those written during his travels in Mexico and South America.

No newspaper correspondent possesses the facility shown by Mr. Curtis in writing on any of the diversified subjects embraced in his correspondence and making it luminous. Nor is any correspondent followed so closely year after year by the thousands of readers of THE CHICAGO RECORD-HERALD. On his recent trip to the Holy Land Mr. Curtis' letters have been read more closely than ever, and his descriptions of that interesting section of the globe as it appears to-day have been quoted everywhere.

A daily letter from Mr. Curtis appears in THE CHICAGO RECORD-HERALD.

THE AMERICAN JOURNAL OF DENTAL SCIENCE has made an arrangement with the publishers of this work which enables them to offer the entire twelve volumes of *The Doctor's Recreation Series* and a *five* year subscription to the JOURNAL at the regular price of the former, payable in monthly installments if desired.

Read the advertisement on another page of this issue.

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EDITOR:
WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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ORGANIZATIONS, PRESENT AND FUTURE.

In the original department of this number will be found an interesting paper by Dr. William H. Trueman, on the "British Dental Association." It deserves careful reading by all those interested in national, state, and local dental societies, for it shows what a determined and united effort has accomplished for the good of the dental profession in Great Britain.

The contrast between this and our own poorly systematized management tends to reduce the egotistic idea that the average American can do things generally a trifle better than his cousin over the ocean. In the matter of organization the said American is yet, apparently, in his infancy, and the maturity of experience seems far away if we may judge by results and the indifference to the subject manifested throughout dental circles.

While it is true, as Dr. Trueman states, that geographical limitations may have much to do with the solidarity and progress of the dental fraternity in Great Britain, it certainly has not all to do with the great results attained. There must be something in the men themselves worthy as an example for us to follow. The question of training has, doubtless, much to do with it,—training as a class. This latter feeling is so sharply pronounced in England that it leads necessarily to a closer bond of union than could possibly exist in this country, where class distinctions have very little, if any, force. It is this individuality, every one for himself, that continually antagonizes effort to effect a professional unity in the United States. It is, perhaps, not desirable that this condition should be changed, for although class distinctions have an advantage in some directions they are a bar to individual freedom, and to that extent make a general advancement along any line of work difficult.

With this national characteristic working against unity, it would seem impossible, upon a hasty view, to develop anything better out of the materials and conditions at hand; yet the situation is not entirely hopeless. Those who have watched carefully the changes in the dental profession in the United States during the past fifty years can but feel that while we cannot reach our English brethren in unity of effort, we, with our larger domain and more extended difficulties, have made good progress towards this most desirable condition.

The question of organization has become a problem, and one requiring the best thought of serious minds. The solution is not one to be quickly thought out or quickly put in practice. The mental peculiarities must undergo a partial and radical change before anything of moment can be developed. It may be said, if this be so, why attempt any improvement? The answer must be that education alone can effect the result. All means should be resorted to to bring the intellectual forces of the American mind to see the importance of this subject, and while it may be long developing, there will come a time when the warped mentality wll assume more perfect proportions.

To accomplish this, strenuous efforts should be made use of to effect results. The literature of the dental profession must be established upon a true professional basis. It must be above and beyond commercial temptations and environment. It must be above all reproach, and hold the standard higher than those do who are supposed to be trained by it. It must lead, and never descend from its high estate to gratify degrading impulses. This is a high mission. Is it being fulfilled by the periodical literature of dentistry in America? The answer cannot be made here, but the fact remains that the great body of the twenty-five thousand dentists in the United States have not reached a standard of unity to be compared with that of England, Ireland, and Scotland, notwithstanding the fact that the organization of dental societies and colleges had their origin here. Who is mainly responsible for this? It seems to the writer that the solution of this problem constitutes the most important question now devolving upon the dentists of this country. Are we prepared to grasp it and meet its difficulties?

An important factor that has been a permanent bar to progress has been our methods of organization. This applies with variable force to all local, state, and national societies, but especially so to the latter. What conclusion must be reached when it is remembered that from two to three hundred members of this body meet annually under the name of the National Dental Association, and this out of twenty-five thousand dentists in the country? There can be but one answer, and that is that the body is non-representative and cannot possibly dominate the professional thought of the great mass. It is a serious question whether it has any marked influence for good in any direction. While numbers are not always important, for one may oftentimes "chase a thousand," still the small number that meet once a year, while good so far as it goes, indicates a state of mental torpor at large in dentistry that is anything but encouraging.

The American Dental Association and its successor, the National Dental Association, have each been founded upon a standard not higher than the level of mind they are supposed to represent. This has been from the beginning the fatal mistake. The teacher must be in advance of the pupil, the leader, of his followers. The National Association has followed the lead of the American and degenerated into a clique of permanent members. It has ceased to be representative, and while the farce is annually gone through with of electing representatives in state and local societies, these bodies are never informed officially of the proceedings of the superior body, nor are they permitted to have a bound copy of its proceedings. These are not to be secured by money and certainly never by love. The natural result is that no unity exists between these organizations. The National Association is to the average dental mind something apart and divorced from his immediate professional life. It meets once a year, and the members enjoy the reunion, but the effect upon the profession for good is an infinitesimal quantity; few know of its work and fewer still read its proceedings. If the plan of selling these to the highest bidder, and that to the exclusion of all other dental journals is, as the writer understands, now in force, the national body might with propriety resolve itself into a dental fraternity, with the usual initiation ceremony, grip, and passwords, for it will have ceased to be an open factor for good.

The association of the future, whenever formed, should combine liberality with conservatism, a not impossible combination. It should be representative in character, but representation should be based on recognized ability. Permanent membership should have no place in this body, nor would it be necessary. It should be so intimately related to subordinate assoiations that the latter would feel it to be a part of their professional possessions. The subordinate bodies should financially aid the superior organization in proportion to their representation, and in that proportion should be entitled to copies of the proceedings. Details of such an organization cannot be worked up here, but it must be apparent that the present methods are a dead weight and can never lead to harmony of effort or to a standard of excellence worthy the efforts and individual progress made in this country.

The future promises two methods of national organization. One in which there should be a liberal representation in the national body. Instead of two or three hundred, there should be five thousand members. This would give an income sufficient to publish the proceedings and avoid the disgraceful method now prevailing. It should have a dental home, possibly in Washington, D. C., with a library worthy the name and with all the conveniences for reference and original research. The main body could, as now, meet east, west, and south, and perform the missionary work of interesting outlying and isolated sections. There seems no reason why, with good business methods, an income of fifty thousand dolars could not be secured. It means work, however, and intelligent methods. This is but the extension of older systems of organization in this and other countries.

There might be organized another, also representative, but the men and women who represent it should be adepts in original investigation. These should meet in national convention and lead the dental profession through the evidence of accomplished work. Such a body would be regarded with a respect not at present given to national organizations, for it would come to be recognized as the final arbiter on disputed questions.

That such an association will be formed in the near future is not probable, but the enlargement of the scope of work through present systems seems not only probable, but very possible of attainment, and its accomplishment should be considered as one of the important things in the next decade.

It is believed the time is nearly ripe for an organization representing all the best local societies of the country, and upon a basis that will satisfy the progressive ideas of the present century. To meet this want the work must cover the entire product of dentistry. Nothing too low or too high to be omitted. There is no organization now existing that meets this demand. Is there sufficient energy among the dentists of the country either to modify those now existing, or, if that be not possible, to organize something that will meet all the conditions and elevate our calling to a place worthy the age and its recognized value as one of the beneficent professions?—*International.*

STRAY THOUGHTS ABOUT REGULATING.

By S. E. Davenport, M. D. S., D. D. S., New York, N. Y

(Read before The New York Institute of Stomatology, April 1, 1902.)

Not because I have anything new to divulge about the regulation of teeth do I appear before you tonight, but because of pressure brought to bear upon me by our board of directors, who thought it time for me to do something.

When I first began giving attention to the regulation of teeth, so hopeful was my disposition that I fully expected so day either to be told by some experienced *confrère,* or to discover for myself, a series of "underlying principles" so governing the movement of teeth that an understanding of them would enable me to apply the proper rule and consequent appliance to every case, thereby securing an infallibly successful result with but little trouble to the patient or myself.

In the mean time, while waiting for the above described revelation to arrive, I blundered along as well as I could, taking from all men who wrote about reguating, and from all whom I could hear talk about it, such ideas and points as seemed to me to be practical, changing some for the exigencies of individual cases and deriving more, I am sure, from these writers and speakers than from any originality which I was able to bring to bear.

I regret that I am unable now, after twenty-five years of some experience with this kind of work, to give a list of those principles which in my youthful days I expected some time to acquire; but while I am a little more versed in the possibilities of tooth movement than I was, and even in its probabilities, I am still looking and longing for fixed principles, a knowledge of which would enable me to eliminate even partial failure from our results and to undertake the most difficult cases without much preliminary study.

While there are numerous well-fixed laws governing the movement of teeth and the changes in their environment most helpful to the student of orthodontia, I have been unable to learn of many rules appliable to all classes of cases which would enable one to describe methods based upon such rules with the words "regulation made easy."

In spite of what has just been said, my opinion is that, al ing for differences in the destiny of the bones and other li variable factors, probably no part of our work is more satisfa tory or more stable of logical results if it be approached fr the proper direction, one step after another of a carefully vised plan being taken.

I remember well a pet remark of Dr. Bogue's so applica to this thought as to bear repetition,—"Do it, don't do *at* it!"

The regulation of teeth is one of the most important bran of dental practice, but it seldom receives the attention it deser even by those who attempt to pursue it.

Hastily formed opinions are often as hastily expressed; sp modic effort is made to move certain teeth often before the den ist has decided upon his general plan, the result being disco agement of all concerned and a resolution made more firm i the mind of the operator by each failure never to attempt re lating unless forced to.

A proper diagnosis of the needs of each case requires not a definite appointment for examination of the child's mouth, b the taking of impressions at that sitting and a postponemen the decision as to the plan to be followed until the casts are co pleted and studied.

The patient should then be seen again and the decision arriv at from the study of the cast tested by a further study of t patient's face.

I wish to emphasize the necessity of studying the face and plaster cast together. Neither is sufficient, in my opinion, w out the other as a basis for a plan, and if a cast were to shown to me today in consultation, while I might give an i as to the mechanical possibilities, it would not be safe for one to follow the suggestion unless the probable result wo coincide with the needed change in expression of the chil face.

No final advice should be given until the procedure as de scribed above has been gone through with, errors of judgme being much less frequent when a study is made of the teeth, t face, and the plaster cast all at one time.

When the cast is made, the view of the lingual surfaces of teeth and their occlusion gives us a great advantage over study of the mouth alone, unable as we are to see the inner s faces of the teeth when closed.

One of the principal reasons for advising thorough study o properly articulated plaster cast of every case before the form tion of a plan is that extraction would thereby be dispensed w

The avoidance of extraction is desirable in nearly every case, therefore never advise extraction in response to impulse.

The many objections to extraction have been ably brought out in the writings of Dr. Isaac B. Davenport, of Paris, and Dr. E. A. Bogue, of New York, and it is not the province of this paper to mention those objections in detail, but one point that I wish to emphasize is that extraction not only produces the lamentable conditions described by the authors referred to, but actually increases the difficulties the dentist has to contend with when striving to regulate teeth.

I believe it safe to say that wherever nature's laws are broken our task is made greater. Without extraction we have in the crowded arch only to expand the arch and rearrange the teeth. Extraction makes the condition at once abnormal. Many forces of retrogression are started, and in place of simply assisting nature we are obliged to combat her. Frequently cases which appear on first examination to indicate the need for extraction of one or more teeth prove later the error of such judgment, for when the arch is sufficiently expanded for the needs of the other arch and for facial expression the full number of teeth often proves insufficient to fill the space secured.

The casts exhibited illustra [illegible] the condition as the teeth were when a gentleman who practices in New York recommended the extration of a superior bicuspid for the purpose of, in his opinion, simplifying the process of regulation. Cast number two shows the case four months later, unfinished, but with the upper arch expanded and, as will be seen, too much room existing even without extraction.

The time being insufficient for considering further the many objections to extraction, I will refer to some methods for making the patient's suffering as light as possible.

My experience has taught me that in both regulating and wedging the suffering is caused almost entirely by interference with the gum, for teeth can be moved a considerable distance with but little pain or soreness if the appliance or material used for the purpose can be kept away from the gum.

This fact accounts largely not only for the great suffering consequent upon the old methods of wedging when rubber and wood were generally used, but also to a degree for the lessened pain from wedging with tape and for the almost entire absence of discomfort even from wedging with fish-line or other suitable cord tied between the teeth.

The great advantage of the last-mentioned method of wedging is that the more the material swells—and some of the most tightly twisted continue to swell for more than forty-eight hours—the further away from the gum it is.

So great a change has this method of wedging made in my practice that many patients who previously dreaded and suffered from the wedging more than the subsequent operations now assure me that they would hardly know the teeth were being wedged were it not for the detection by the tongue of the little knot or ends of the line.

This comment upon wedging materials is not so much of a digression from the subject of this little paper as it at first seems, inasmuch as the use of fish-line wedges constitutes a considerable part of many minor cases of regulating.

Dr. Isaac B. Davenport, of Paris, was, so far as I know, the first to make use of fish-line for wedging.

At the May, 1899, meeting of the Institute it was my priviledge to describe, with some attention to detail, Dr. Davenport's methods of adjusting the fish-line and the result of my own experience with it for quite a number of years.

The record of this can be found in the *International Dental Journal,* September, 1899, pages 586, 587.

Because of what I have learned, considering the advisability of keeping away from the gum as much as possible, I have for a long time depended almost entirely upon fixtures easily removable, relying principally upon springs and screws for the power of action.

At first glance this would seem to many bad generalship, enabling the patient, as it does, at any time to remove the fixture, but this apparent disadvantage amounts to nothing in comparison with its many advantages when one refuses, as I think all practitioners should, to undertake a case of regulating unless sure of the earnest co-operation of the patient, or at least of the one having most influence with the patient.

Among the advantages possessed by removable fixtures are the possibility of keeping both the teeth and fixture clean, the lack, as above stated, of uncomfortable impingement upon the gum, the freedom of the patient's mouth at meals from the appliance and the consequent enjoyment of food with lessened interference with nutrition, and last but not least, the absence of that feeling of utter hopelessness which a secured fixture usually gives a child, resulting often in not only a lessened interest in the result but sometimes in a desperate disregard of all appeals for co-operation.

Acknowledging the rule of exceptions, there are, of course, occasional cases necessitating the opening of the bite, in which the patient must wear an appliance during meals, removing it only for the purpose of cleansing, but wherever possible, and in spite of a knowledge of strong advantage possessed by certain fixed systems of regulating appliances, such as the Angle, Knapp, etc., I should advise the use of removable appliances if there were no other reason than the greater health of the mucous membrane which almost always accompanies their use.

It is not necessary for me to even remind my hearers that regulating plates must not extend over the masticating surfaces of the back teeth unless a shortening of the bite is desired, and fortunately, since Dr. V. H. Jackson, of New York City, so completely systematized the use of wire cribs and half-cribs, we are able to adjust to the teeth fixtures accurately and securely without shortening the bite to any great extent.

Too much credit cannot be given to Dr. Jackson for all he has done for the great department of orthodontia, and while, of course, we may at times prefer some modifications of the fixtures which he so strongly advises the use of, his inventive genius and free contributions to our knowledge have placed the whole profession under great obligation to him.

EXPANSION OF THE UPPER ARCH.

While I have successfully used the Coffin plate and modifications of it for expanding the upper arch, which, by the way, is one of the most frequent phases of regulating we are called upon to perform, for a number of years I have in almost every case used a rubber plate, split part way through, with a gold and platinum or platinum and iridium screw, made in my own laboratory, for the motive power, and so arranged that if advisable the patient may take charge of the expansion.

As this is not a double-ended screw, the pressure and consequent movement of teeth is slighty unequal, and, as every arch needs greater expansion on one side than on the other, this unevenness of action is an advantage, for one can always so place the screw when making the plate as to give the greatest movement to the side requiring it.

The position of the screw in these split plates and the length of the split govern the teeth movd and the amount of movement effected.

These slit expansion plates are often valuable for use after sufficient expansion has been secured, not only as temporary retainers, but to hold little screws which are placed in the rubber behind individual teeth needing more movement in some direction.

For this purpose German silver wire of various sizes cut in a coarse thread screw-plate answers as well as anything, with the advantage of being inexpensive.

German silver is a very valuable aid in regulating, it being suitable for the Jackson cribs and half-cribs, for spring wire when the greatest force is not needed, for use in rubber fixtures where strength without bulk is desired, and, as has already been said, for the screws so often needed in the edge of rubber fixtures.

German silver does not answer for the expansion screws or any designed to run in metal nuts, for the material does not possess sufficient strength to make its thread durable when in contact with metallic surfaces.

While referring to German silver and its uses in regulating, it may not be amiss to remind my hearers that it is very useful in other ways to the dentist, inasmuch as it can be soldered with eighteen-carat solder without injury, is not affected by contact with fresh amalgam or even pure mercury, and rubber vulcanizes about it almost as well as around gold or platinum, provided the German silver has been kept from the tarnishing influence of the atmosphere, and even then if the tarnished surface be removed with sand-paper or a file.

There are two kinds of German silver, and for dental purposes the hard and springy variety is desirable. It is procurable of Patterson Bros., 27 Park Row.

OPENING THE BITE.

The expansion of the back part of a lower arch is usually most readily effected by a plate made after the Coffin principle, using either piano wire, German silver, or platinoid for the spring connecting the two parts of the plate.

If a general expansion of the front part of the arch is desirable, it may be effected either by the use of Dr. H. A. Baker's plan, which is a rubber plate the upper portion of which is split as far back on each side as the teeth need to be moved, an ingeniously bent spring of piano wire or platinoid furnishing the power; by a rubber plate split somewhat as in the Baker plate, but with a gold and platinum jack-screw instead of a spring; or by a Jackson plate or rubber modification with German silver or platinoid springs.

When certain lower teeth only need to be moved out, an ordinary rubber plate so constructed that the closing of the jaws will ause pressure may be used, the little German silver screws being placed in the rubber behind the offending teeth and turned out a little daily with pliers or a watch-key.

I have said so much about the use of these little screws in rubber plates, and I find them so valuable, that it may be best to say a few words regarding their application.

The size of screw desired having been chosen, it is measured in the bur gauge and a bur one size smaller than the screw is placed in the engine ready for use.

The rubber plate then being in position in the mouth, the angle desired is marked with a lead-pencil upon the rubber, the plate then being removed and drilled for the screw, which is turned into its rubber socket with a small hand-vice.

Often the screw will need to entirely penetrate the plate in order that some material may be ready to be turned out against the tooth, and until it is turned out the exposed end should be covered with soft gutta-percha or composition to protect the tongue.

Usually in regulating the dentist will think of more than one way of doing the same thing, and if so, it is not only his duty but for his interest, and will make for the success in the case, to choose the method least uncomfortable for the patient and the least objectionable in appearance.

One of the most frequent defects which we are called upon to treat is that class of so-called short bite in cases in which the lower incisors bite almost into the gum behind the upper incisors. This condition is caused by a variety of influences, among which I will mention extraction, tardy development of some of the back teeth, and previous attempts at regulation by the use of plates capping the teeth.

Oftntimes the correction of this condition is the key to the solution of all the problems presented by that mouth, and is therefore the first trouble to be overcome.

It is generally corrected by a thin rubber plate in the roof of the mouth held up by atmospheric pressure or by light half-cribs, the lower incisors and cupids biting against the rubber behind the upper teeth in such manner as to open the bite and leave the molars and bicuspids without occlusion.

Not only does elongation of these back teeth naturally follow, but the lower six front teeth, receiving as they do the entire force of the bite, are slowly but perceptibly shortened, and often in a few weeks the back teeth with the plate in position and the mouth closed will be in firm contact.

Should the amount of change effected be insufficient, an addition of rubber to the part of the upper plate against which the lower front teeth strike will result in an added elongation of the back teeth. Dr. C. A. Woodward, of New York City, an expert in orthodontia, has carried to successful conclusion many important cases of this character, and treats them by placing temporary gold crowns upon the lower bicuspids.

This method has the advantage of relieving the patient of a plate, and never causes any forward movement of the upper front teeth, which does occasionally follow the use of a plate in the roof of the mouth, but it has the disadvantage, it seems to me, not only of failing to shorten the lower incisors and cuspids, sometimes so necessary, but, the great pressure of mastication being borne entirely by the bicuspids, usually shortens them materially.

While nature usually allows these bicuspids to elongate quickly when the gold crowns, having effected their object, are removed. I confess a prefernce for either the plate method or a combination of the two, in spite of the success attending my use of Dr. Woodward's method in two or three cases.

Some one has said, "Fortunate is the man who lacks inventive genius, for he is able without prejudice to choose the best ideas of all men."

This seems to me to be in a measure true in influencing success in regulating, the widely varying demands of the different cases presenting requiring the use of many principles and forces.

One possessing great powers of invention is not only apt to have his ideas running in a groove, but is likely to depend too much upon himself for plans and methods.

Still, there is no department of our specialty, probably, which so successfully trains one of even ordinary ability to think and act quickly and logically as does orthodontia.

It has always seemed to me, therefore, that those detists who decide not to accept or "bother with," as the phrase goes, regulating cases deny themselves the advantages of one of the best possible training schools in which patience, quick thought, and readiness for emergencies are taught more effectually than by any other department of our work.

Regulation of the teeth also fills the longing felt by many of us for action outside of ordinary dental practice, giving sufficient diversity to our work to prevent the mental inertia which is so apt to come to the professional man who is called upon to do practically the same things each day.

ADVANTAGE AND INFLUENCE OF ASSOCIATIONS.*

BY DR. I. A. SMITH.

For what purpose are we gathered here to-day? Are we here for a good time? Is there as much pleasure in attending a Dental Association as might be derived with the rod and line on the lakes, rivers, or out on the gulf? I dare say even the treasurer's chair would be vacant if we were out pleasure-seeking. We meet annually, at more or less expense to each member, prosecuting the studies and duties that began with commencement.

We feel it a duty, not only to ourselves, but to those we serve, not to be satisfied with the diploma and our individual experience. Man is a gregarious animal. That it is not good for him to be alone, is not fully covered in the giving of a helpmeet. Yielding to instinct or this natural influence men, in all ages, have associated themselves together to attain that which, if attempted singly, would end only in failure.

The organizers of the Dental Association (I may say the fathers of dentistry, for if there are those who deserve this cognomen, it is the founders or organizers of the Association) recognized this truth, and we can readily infer what order of men they were. Something more than the dollar mark was stamped on their brains. They had not to subscribe to any written code of ethics. "Mutual aid, upward and onward," were their watchwords; and if they are about us to-day, and we are *en rapport* with them, we are still holding the ship for the port for which sails were set in the beginning. There may be those, or may have been those, whose objects were purely political or mercenary, though I am inclined to the opinion that they are exceptions.

While we approve and strive to the highest ideal of Association membership, we cannot fully divest ourselves of self, and if we could it would not be well. The majority of this body today are expecting more than they give, and likely they will not be disappointed. Each may teach the other something that they did not know, or remind them of something forgotten. Imitation is a faculty more or less developed in all individuals, and may be given a profitable lesson at this meeting. We have men who are artists in their lines at every meeting, whose clinics,

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papers, and discussions may not be ignored profitably. Equal with the colleges has the influence of the Association advanced the standing of the Dental Profession. The schools improve the personnel of the Association, and this has had to do with the advance of the curriculum. The school should impress the importance of the Association on the pupil.

The young man who expects to keep in the foreground of the profession will not content himself with the idea that he knows enough, but will join State and National Associations, and attend the meetings as often as possible. Were the head waters of the Mississippi the only waters that pass to the sea in the great channel which marks our western border, a levee board would not be necessary. Should individuals of the Dental Profession confine themselves to text-books for twenty years, without mingling with his professional brethren, or reading the literature mostly written by Association members, would he not indeed be a Rip Van Winkle among a body of dentists who keep in mind the watchword of the fathers? I would not be understood to say that men who do not attend the Associations are Rip Van Winkles, but I will say that they would be were it not for Association work or its influence; and if this be true, it is the duty of every dentist in this State to come in, and stop complaining that the Association is run by individuals, cliques, or civic orders, or that some member not admired holds an office.

The latter condition cannot continue long, and there is no truth in the first objection. There would be fewer postgraduate school advertisements if there were a more general attendance upon the Associations. When it is possible, the National Association should be attended. The present year offers an opportunity of attending one of the largest gatherings of dentists ever assembled in this country. I speak of the Fourth International Dental Congress, to be held at the Louisiana Purchase Exposition, St. Louis, August 29. Let us all go and give a good report of dentistry in Mississippi.

THE LITTLE THINGS IN DENTISTRY.

Solomon the Wise hath said:—"Take us the foxes, the little foxes that spoil the vines, for our vines have tender grapes."

Fifty years ago when dentistry was looked upon as an art instead of a profession, it was legitimate, nay imperative, that each artisan guard safely within his own breast, all the secrets and skill he had acquired, lest his rival obtain them and use them to his profit.

Today, as an inter-dependent profession, we must foster co-operation, for it is a basic principle, and upon it the success or failure of our profession rests.

First let us consider our duty to the young practitioner. The present curriculum of our dental colleges and the additional term of years goes much farther in perfecting the student of today than the course of five or six years ago. Yet there is a vagueness, an uncertainty, upon the part of the young fledgling, the untried theories, the lack of assurance, that the years of practice will afterwards bring.

The cry of the little stranger is heard in the home. How the tiny voice penetrates every nook and cranny, servants pause in their work to listen to the tiny wail, brothers and sisters tiptoe in awe from room to room, but there is one whose subtle instinct is attracted to the little waif so newly launched upon life's stream; a source from which emanates warmth, shelter, and security as it nestles in her arms, and from her also emanates the sustenance of the babe.

So the alma mater maternizes the student, until the sturdy lad is ready to go into the world, and take his place among men.

But there is an interim, when the fledgling, having been weaned from the milk of the dental college, is yet not strong enough to eat and digest the strong meat which is the diet of those farther along in years and experience in his chosen profession.

And now, my brother, what has been your attitude to this youngsters, whose bright, new shingle hangs some morning close to your door? Does not your mind revert to the time when you also had to face the world, and all was new, untried and strange?

There he is, and there he will stay, and his relation to you will be just what you make it. Take him under your fostering care, encourage him to come to you with his confidences, help him to meet the trials and discouragements we all have to encounter, and nine times out of ten you will not find an opponent, but a young companion, who will often relieve the tedium so often imposed upon us in our profession, and (without the constraint that a partnership entails) you will have a partner and mutual co-operation will be a pleasure.

Then don't keep all those little wrinkles to yourself, that years of hard knocks and experience have taught you, but tell the young man how to put some of the theories that are making him top-heavy, into practice. Make the hand do accurately what the brain dictates. Show him how nicely you slip a cylinder of gold into the cavity so that it will not wabble and drop out while you are reaching for another piece to support it.

Tell him how to procure an impression that will give a denture as accurate a fit in a soft, flabby mouth, as where the palate and ridge are hard and firm. Tell him how to pack a case with an even amount of rubber, being sure of having enough, and little or no excess. Demonstrate how you get the joints of your gum sections ground up so nicely, yet never crack a block or have dark joints. Tell him the little wrinkle of going carefully around the edges of the vaccuum chamber with a rubber chisel, seeing that the line of continuity is not broken, then taking a wheel burr and making a continuous, even undercut all around it, when—presto—the plate that was continually dropping is rigid and firm in the mouth. Tell him the hundred and one little things that a father would tell his boy, and you will never have a rival, but a comrade, in the profession.

How much the younger members of this society owe to our lamented Dr. Thos. Hunter, to Drs. Everett, Turner, Harper, Rominger and others who have taken a peculiar pleasure in imparting knowledge and the result of their labors to the young men whom they have gathered around them.

Patient versus Dentist.—In no other profession is as much discrimination called for as in dentistry, where all classes and conditions of people are to be met. Temperament, physical conditions, age, sex—all appeal to the practitioner—and he should be an expert physiognomist.

How true the adage that "A chain is only as strong as its weakest link." Young man just recently graduated, practitioner of years of experience, run over these links carefully one by one, test their strength, find the weak point, if you are not sure how you would meet a certain case were it in hand, make it a thorough study, experiment, have your laboratory light and airy, well equipped, and as clean and attractive as the operating room. take as your life motto: "Observe, Compare, Reflect, Record."

Remember that there are no two cases alike. Young man, with all the diversity that there is in your profession, there is little time to devote to the latter-day novel! You are launched into a perfect maelstrom of competition. As expressed by Matthew Arnold, "You are in action's dizzying eddy whirled." You are pitted against men of brains, research, and thought. As you begin so shall you endure, sink or swim, live or die.

Then lay a areful snare for the little foxes that eat up the tender young shoots; the vine that has just been transplanted needs no pruning, but must be tenderly nourished, carefully trained; so the little things in dentistry; the bright, clean, attractive office, comfortable, easy chairs in the waiting room, a few pots of flowers with their bright blooms in winter, a vase of cut flowers in summer, one or two recent magazines or papers on the table; if your limited means will not admit mezzotints and half-tones, have a few good engravings on the walls, for in no profession is a man so judged by his surroundings as in the dental. Then, is it necessary to say that cleanliness in the operating room, sanitary cuspidor, bright, well-kept instruments, spotless linen, the personnel of the dentist himself, all bear an immense weight in moulding the impressions of your patients?

Just a word regarding the manner in which you approach a patient. Young or old, rich or poor, just use the gift of good common sense nature has endowed you with, and be sure you don't err right here! You pride yourself upon your affability, do you? That's excellent, but don't be too suave, be alert to please, but always remember that adaptability will be a surer ally than affability. You do not manipulate gold, cement and amalgam after the same formula. One patient is a diamond (in a practice of twenty years I have found but few), another a pearl—bless these sweet pearls—I love to work for the children; another an angel (rarest of all species), the balance (?), well they certainly don't fall under any of the above classifications. I like to be charitable and imagine that some patients are not quite compos mentis, while under the tender ministry of the dental surgeon.

Was Job patient? What knew Job of dentistry, practitioner, and patient?

Truly our lives are made up of littles, sometimes the noblest and best of all, so much more sunshine than shadow.

Gird yourself with some of these little things, and as the fair maiden becomes still more bewitching, as she dons her bravest apparel, then the rings, the brooches and the chains, and goes forth conquering and to conquer, so shall we, girted with the little things that go to make up all that is true, all that is noble, all that is tried, attain the heights ambition has led us to, and finally as it so beautifully expressed, "Wear a crown that ne'er encumbers, nor can be transferred."—*North Carolina Dental Society Paper, Dr. W. W. Rowe, Greensboro, N. C.*

HIGH-FUSING PORCELAIN FILLINGS.

In turning over the leaves of the dental literature of the past decades when the science of dentistry was still in its cradle, and there was not even one trustworthy metal for filling, it is interesting to creep in, that it is seldom that even an experienced operator completes a case which is absolutely perfect. The nature of the material, in that it is not susceptible of the slightest alteration or correction after it is once completed, demands the most positive accuracy of the method and manipulation and the greatest care and skill.

Burnishing for the Matrix.

Needless to say, the burnishing of each step is repeated until accomplished, annealing the matrix each time before it is returned to the cavity. A piece of 1-1000-inch platinum is cut large enough to extend well beyond all margins other than the cervical margins. After annealing, place in position so that the surplus will be about equally distributed beyond the margins of the cavity. Take a piece of wet cotton and place so as to depress the platinum into the cavity, using a small-sized, round-nosed burnisher and adding additional pellets of wet cotton as the platinum is carried to place, taking care that at no time you are in danger of the burnisher going through the cotton. At this point you do not attempt to turn the platinum over the margin. Remove the cotton and the matrix from the cavity, and if your packing has been thorough you will find that the platinum has been carried to every part of the cavity and your margins are fairly well defined, with little or no danger of breaking through the platinum. If you have broken through the platinum inside the cavity, no harm will result as the body will bridge across without danger of flowing through. If you have any platinum at the cervical margin which will press upon or hurt the gum while burnishing, trim away at this time. Anneal, return to the cavity, and burnish the edges well.

All inlays for restored contours or simple saucer-shaped cavities I build up in layers, and never less than three layers: foundation, color, and enamel.

Before stripping the platinum from the inlay, try into the cavity to see if you have the correct contour. Also have the occlusion just as near as you can by observation. You should not have the patient close upon the inlay, because previous to its being set it would be easy to fracture the porcelain. If the contour is lacking, build in more; if too full, grind it just as desired, and return to the furnace to be glazed again. The inlay is now ready to be set.

Building and inlaying accomplish three objects:

First. A natural-looking translucent inlay.

Second. An inlay built of three or more layers of different body will break up the absorption of light so that from whatever angle or point of view you look at it will appear practically the same; while an inlay built of all one body or mixture will absorb light all in one direction. Viewed from one point it may seem all right but from the opposite point of view will show up as plain as black and white. An inlay built of layers will come very near imitating nature's method of building up a tooth, and by breaking up the direct absorption and refraction of light rays, will come very near looking the same from all points of view.

Third. You overcome the great bugbear of most inlay workers—the cement showing through after the inlay is set. An inlay built up in layers will prevent the reflection through from underneath the cement it is set in. You will often hear operators say that they had a splendid color before the inlay was set in, but that after it was set the cement killed it entirely. That was because the inlay was all baked in one body and the cement could reflect through from underneath.

Porcelain is an ideal filling in approximal cavities. It saves poor structure, and to a great extent conceals the fact that they are filled, more than in many other positions. It is gratifying to know that by this method we have been able to give a natural appearance to the teeth, and many ladies who came to us as young girls with cement or discolored gutta-percha remnants find a source of satisfaction in not having these same cavities excavated and refilled every few months.

The use of high-fusing bodies necessitates, of course, the employment of platinum in forming the matrix. Platinum is not so difficult in manipulation, if the perfectly pure article can be obtained, not thicker than 1-1000 of an inch. It is claimed that in cavities with frail and complicated curves it cannot be burnished safe over frail edges. This if properly annealed, can be avoided. To eliminate complicated curves and reduce to simple ones, heroically cut tooth tissue, thus changing an unfavorable case to a favorable one. A perfectly successful inlay—such we intend to always make—will be one which, under ordinary conditions, will be practically invisible, hence a little sacrifice of tooth substances is not a matter of much importance.

I will now try to describe a few points where we have large contour approximal fillings, especially in the centrals. It is a good plan to make your cavities come over occlusively or lingually. Then by making a step and forming a pit in the bottom of the step, also in the cavity nearest the cervical border, put another pit, and after the matrix is burnished well in the cavity, invest the platinum pin—something shaped like a fish-hook. Around this flow your porcelain, then you will have a compound anchorage when a great deal of stress is needed.

The use of hydrofluric acid to etch the filling next to the cavity will add wonderfully in causing the cement to retain the inlay.

If the body warps from the matrix and in trying to the cavity you find some space, you will peel away the porcelain from the body and place in more porcelain and rebake. You will find it will be an easier plan to destroy and begin anew.

Where there are two approximal inlays it is better to have them a little darker than the tooth, as they are not so noticeable; but where there is one approximal filling it is better to have it a little lighter than the tooth structure.

The use of very small and short camel's hair brushes, I find, is a handy way of putting on the different layers in the matrix. Also the double X Enamel body furnished by Brewster when the inlay is complete.—*Extract North Carolina Society Paper, Dr. J. A. Gorman, Asheville, N. C.*

A CASE IN PRACTICE.

The patient, a little girl three and one-half years of age, had been kicked by a horse, the blow falling on the right cheek. Two physicians had been called, who stated that the lower jaw was "slightly splintered." However, after giving her chloroform and keeping her under its influence for three hours (according to the statement of the child's parents), the doctors had to give it up and the child was brought twenty miles across country in a spring wagon to my office.

I make the foregoing statement, not out of disrespect to the physicians, who no doubt, did the best they could, but to give you an idea of the condition of the child when the case was placed in my hands.

Thorough examination showed that the inferior maxillary bone was broken squarely at a point between the right central and right lateral incisors, and also between the right molars, the latter being what we might term a ragged break, running downward and backward and also inward and backward. On account of the extreme youth of the patient, I could not anchor to the teeth sufficiently to hold the parts together, so calling a physician I had the child again placed under the influence of chloroform, and placing the parts in their proper relation, I made impressions of the jaw, both interiorly and exteriorly, from which I made plaster models. From these models I made an appliance which I will try to describe:

To place inside the mouth and cover all the teeth I made a plate of vulcanized rubber, in which were fastened two steel rods, bent at right angles, in such a manner that they should extend out at the corners of the mouth and downward past the chin on either side. These rods were threaded at the lower end and fitted with burs. Next I swaged a plate of thick German sliver, to fit under the jaw and extend up about half an inch all around the chin and buccal sides, and to it I attached two tubes to receive the rods before mentioned. Then padding the metal plate with a thin piece of white felt, I placed the appliance in position on the child's jaw, and tightening the burs on the rods, soon had the broken bone held firmly together.

As an extra precaution I put both her arms in splints (loosely), so that she could not get her hands to her face and pull at the appliance, knowing that she was too young to understand why it was there and would try to get rid of it.

Sixteen days later I removed the appliance found the bone thoroughly united, and, to my great delight, found the occlusion to be perfect.

In describing the case I have tried not to exaggerate, and I think the child was really in a much worse condition than I have portrayed. It was the worst case I have ever seen, and my greatest hopes were exceeded by the result of the treatment given it.—*Dr. W. T. Uhl, The Bur.*

OFFICE CONDUCT.

Have specified office hours. And every dentist should have an assistant or attendant, preferably a lady, as she will be more congenial to the majority of your patients and take more interest about the office. She will answer the door, and also show your patients out after they leave the operating room, when the dentist's obligations to him or her should have ceased. Avoid entering into lengthy conversation with patients, as it interferes with your work and takes up your time, which to the busy dentist is money; and, above all things, cut out the use of liquor and tobacco immediatey preceding and during office hours. Be particular that your breath is fresh and sweet, and avoid using strong perfumes, if any. It may cost a little more of your earnings to be well and neatly dressed, but no dentist can afford to be otherwise. Make your appointments and adhere as closely as possible to the hour named. This is often not convenient but do not keep the patient waiting indefinitely after the hour of his or her appointment. If such be necessary, have your attendant explain and possibly make a new appointment. Never find fault with anything your brother dentist may have done. If you cannot speak favorably of him, do not say anything. He may have shortcomings; so have you. Do not have your office decorated with such cards as "Strictly Cash," "No Credit," etc. This is not professional. If you wish to enforce the cash principle, hand your patient a statement of his or her indebtedness before leaving the operating room. They will generally understand what is meant. If not, you can then and there remind them of your principle. By pursuing this method you can then treat people according to their individual desire to pay. This part of a practice is rather important, but patients must be treated in a way becoming to a professional man and a gentelman. Be particular about the collection of your accounts, and have some arrangement with any of your patients of whom you are doubtful as to when and how they can pay. Live up to these arrangements, and they will, as a rule, try to do the same. Exhaust every means in your power in the collection of an account before placing it in the hands of a solicitor, and resort to this last means only with your best judgment. Never lose control of your temper with patients, although at times it may seem thoroughly justifiable that you should.—*Dr. F. T. Coghlan, Discussion, Dom. Jour.*

REPLACING BROKEN FACING.

An excellent and simple method of replacing broken facings in bridge work and crowns was shown by Dr. E. A. Bryant, of Washington, D. C. After removing any pieces of porcelain and the protruding pins from the old backing, a new facing is selected and ground to place, new holes being drilled to suit the new facing. The two holes in the backing are now united by drilling out the intervening metal, thus forming a slot. Wrapping the tooth with a single thickness of asbestos paper, and passing a piece of iron binding-wire around it to keep it in place, the pins which have been forced through the asbestos are now united by soft solder melted into place with a fine pointed soldering iron.

After trimming, so that the lug (formed of the pins and solder) will easily fit into the slot in the backing, and countersinking the slot on its lingual side, the flat surface of the facing and the lug are covered with good cement and forced into position. While the small amount of cement contained between two pins and pin holes will not prove sufficient to secure a new facing in position, the larger surface of the lug and the slot will retain enough to offer the desired resistance.

If preferred, when the cement has hardened, most of it may be removed from between the lug and slot, and its place supplied with amalgam, which readily unites with the soft solder.—*Dr. S. H. Guilford, Stomatologist.*

BOOK REVIEWS.

A Practical Treatise on Nervous Exhaustion (Neurasthenia), Its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A. M., M. D., edited with notes and additions by A. D. Rockwell, A. M., M. D., Professor of Electro-Therapeutics in the N. Y. Post Graduate Medical School; Fellow of the N. Y. Academy, etc., etc. Fifth edition, enlarged. Publishers: E. B. Treat & Co., 241 W. 23rd St., N. Y. Price, $2.00 net. Cloth.

This disease was first recognized by the author, and the work with the additions and revision by Dr. Rockwell is most valuable. It is divided into some seven chapters covering the Symptoms, Nature and Diagnosis, Prognosis and sequences, Treatment and Hygiene, Etiology and Pathology and the Neuron Theory in its Relation to the Treatment of Neurasthenia. This last chapter by Dr. Rockwell is very timely.

Taken altogether we are very much pleased with the work and cheerfully recommend it to our readers.

Nephritis. By Prof. Carl von Noorden, Physician in Chief to the City Hospital, Frankfort, Germany. Authorized American edition translated under the direction of Boardman Reed, M. D., Professor of Diseases of the Gastro-Intestinal Tract, Hygiene and Climatology, Department of Medicine, Temple College, Philadelphia. Publishers, E. B. Treat & Co, N. Y. Price, Cloth, $1.00.

The author's handling of this subject is bold, original and somewhat iconoclastic. He rides roughshod over mossecovered tradition. Nothing is sacred to him but indubitably demonstrated truth. He has a way too, of confirming or refuting alleged truths for himself, taking nothing for granted.

By actual experiments he has exploded the myth so long accepted that the light meats are safer than the dark ones in various diseases including nephritis. He has gone far towards disproving the theory that milk is the best diet in all cases of nephritis. Indeed he has demonstrated that in many cases the ingestion of fluids needs to be restricted rather than encourage In various other respects he has established for the treatment of the different forms of Bright's Disease, rules founded upon critical study of numerous cases, instead of the familiar directions handed down from an earlier period when clinical observations were less exact and pathologic theories more nebulous than at present.

This book is one of a series on the Disorders of Metabolism and Nutrition by Prof. von Noorden and is worthy of a careful reading.

Colitis—Membranous Catarrh of the Intestines. By Prof. Carl von Noorden, with the collaboration of Dr. Carl Dapper. Authorized American edition translated under the direction of Boardman Reed, M. D. Philadelphia. E. B. Treat & Co. N. Y. Cloth, 50c.

This is one of the diseases which every busy physician encounters frequently, and under the methods of treatment prevalent until very recently it proved difficult to cure, probably because it was imperfectly understood, conflicting views being held by eminent clinicans concerning not only its etiology and pathology, but also concerning the therapy appropriate to it.

The author traverses all these questions in a manner well-nigh exhaustive and also most convincing, since he is able to report a remarkably large proportion of cures obtained by the methods which he recommends.

Auto Intoxication—The Acid Auto Intoxications. By Prof. Carl von Noorden and Dr. Mohr. Authorized American edition translated under the direction of Boardman Reed, M. D. Publishers: E. B. Treat & Co., N. Y. 1904. Cloth, price 50c.

The author's studies into the derangments of metabolism which result in an overproduction of acid, thus endangering the proper degree of alkalinity of the blood, may seem at first somewhat abstruse and of less utility than the subjects of the previous volumes of this series, but in reality they concern the clinican very nearly. Physicians treating chronic disease successfully must keep a close and intelligent watch upon the digestion, excretion and assimilation of their patients, and they will agree that this work is a valuable and helpful one

Saline Therapy—Concerning the Effects of Saline Waters on Metabolism. By Prof. Carl von Noorden, and Dr. Carl Dapper. Authorized American edition, translated under the direction of Boardman Reed, M. D. Publishers. E. B. Treat & Co., N. Y., 1904. Cloth, price 75c.

In this work the author decides in an authorative way the mooted question of the influence of the sodium chloride waters on the digestion in conditions of disturbed gastric secretion as well as in gout, diabetes and other diseases of nutrition. Applying the satisfactory clinical method of exact observation in a large series of carefully studied cases he has arrived at results which are different in some respects from those reached by experimenters upon animals and healthy men. His results thus obtained are manifestly a safer guide for clinicans. They constitute an important contribution to the therapeutics of various prevalent as well as troublesome affections, and should prove of exceptional interest and value.

Drink Restriction (Thirst Cures), Particularly in Obesity. By Prof. Carl von Noorden and Dr. Hugo Salomon. Authorized American edition, translated under the direction of Boardman Reed, M. D. Publishers: E. B. Treat & Co., N. Y. Cloth, price 75c.

This work is a most instructive one upon a subject of the highest practical importance. Especially in this country where hot water drinking and colon douching have been carried to an irrational and often harmful excess, will his warnings be timely. Unfortunately, not all physicians realize that not only does every mouthful of surplus food add to the burdens of all the digestive and excretory organs, instead of strengthening the body, but that every superfluous ounce of liquid ingested adds to the labor of the heart and kidneys, besides having to be for the most part forcibly extruded by the stomach into the small intestine before it can be absorbed. It is sad to think how many victims of dilated heart, dilated stomach, and of Bright's disease have been encouraged to drink themselves to death, and how many patients afflicted with obesity have shortened their lives by continuing excessively fat, with all its discomforts and dangers, to the end of the chapter, waterlogged because of unrestricted drinking.

A Therapeutic Guide to Alkaloidal—Dosimetric—Medication. By John M. Shaller, M. D., former Professor of Physiology and Clinical Medicine in the Cincinnati College of Medicine and Surgery, etc., etc. Second edition, revised and enlarged. Chicago. The Clinic Publishing Co., 1904. Cloth, Price $2.00.

The text of this work contains the subject-matter of two courses of lectures on The Uses of Dosimetric Medicines delivered in connection with lectures on Clinical Medicine to the students of the Cincinnati College of Medicine and Surgery.

The various remedies, an account of which formed the basis of which formed the basis of these lectures, are considered the most important in general use, and are usually sufficient to enable a general practitioner to treat successfully such cases as present themselves to him.

Only those remedies are presented that the writer has himself found to be reliable and valuable in everyday practice and for that reason it will be found a safe guide to follow in practice.

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WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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DENTISTS AND NOSTRUMS.

Here is a list of dentists who use and recommend a proprietary abscess cure. So many names are published as recommending all kinds of things, without proper authority, we ask if the following list is correct. We may be inclined to make a few remarks on the subject if deans of colleges begin to push nostrums, and, if they do not do so, they should make a few remarks to those who use their names without authority.

We used AB-KON-KER in our practice and recommend it to the profession:

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J. A. Watling, D. D. S., ex-Prof. Operative Dentistry, U. of M., Ypsilanti, Mich.

C. S. Terry, D. D. S., 103 State St., Chicago.

F. B. Adams, D. D. S., ex-Secretary Northern Ind. Dental Association, Elkhart, Ind.—*Editorial, Dominion Dental Journal.*

"CONTROLLING NERVOUS PATIENTS."

WM. C. GILLESPIE, *D. D. S.*, NASHVILLE, TENN.

The June number of "American Journal of Dental Science" contains an article entitled "Christain Science in Dentistry" by Jno. Warner Keyes, D. M. D., of Washington, D. C., that was read by me with considerable interest. Dr. Keyes tells of most gratifying results obtained by first giving patients "Christian Science" treatment before beginning dental operations, thereby allaying nervous apprehension and irritability, decreasing susceptibility to pain, and gaining control of patients through the medium of "mental conditions."

Dr. Keyes is eminently correct in the ground he has taken as to possibility of the operator doing all these things through the agency of mental conditions, and he who does not avail himself of this indisputable power is ignoring the most valuable asset to a dental practice. I do not claim—nor does Dr. Keyes in his article—that one may become a "Painless Dentist" through this or any other known mode of practice, but it is a positive fact that at least 98 per cent of patients can be controlled and made to endure whatever pain is unavoidable with but minor manifestations and little interference with the operator. For the other 2 per cent a good big stick well applied would be productive of most satisfactory results to the operator and prove really beneficial to the patients in after life, but such moral suasion is more strenuous than diplomatic and has its drawbacks.

It affords me pleasure to sustain Dr. Keyes' claims in every thing so far as he attributes this control to utilizing "mental conditions," for by so doing in six years of practice I have never had but four patients to make an outcry in my office—and then only a slight disturbance—and never had a patient faint. But though the method of gaining control over nervous patients as applied by Dr. Keyes and myself is no loubt identical in principle and results are apparently the same, it is somewhat of a question in my mind just what it can be we are applying. I stray from the "straight and narrow path" as often as the average sinner, and am as susceptible to the seductive charms of ordinary small temptations as the general run of mankind. Hence, as I cannot conscientiously claim to be a Christain, I do not just understand how I could successfully practice "Chistain Science." The "Science" we both employ can be as successfully applied by the chiefest of sinners as by the most devout christain who ever bombarded the throne of Grace with soulful prayer.

In my practice I have found my own self control and manner of bearing has everything to do with that of the patient. It rarely takes me over ten or fifteen minutes to get the most nervous, hysterical patient under thorough control. I would hardly ever know they were nervous or hysterical if they did not, with much apparent pride, tell me how they raised sand when Dr. So-and-so worked for them. Of course, with young and badly spoiled children whose parents haven't had sense enough to comtrol them at home, it takes longer and results are not as satisfactory. In such cases I never try to operate with the mother or father present. I make another engagement and have the child come with nurse or older child.

The secret of controlling any patient lies in the following: When patient is in the chair always speak in a *low, even* tone of voice; speak deliberately and let every movement be deliberate and smooth—never nervous or jerky; have no instruments in sight but those absolutely necessary at the beginning and get out others as you need them. If patient insists on telling you how many different kinds of fits they always have when they go to a dentist, look them straight in the eye and let them talk themselves out without making any comments or showing any interest in their tale of woe. When through they will feel like one who tells a story and misses the point or it falls flat, and they will settle back in the chair disgusted with themselves. Their entire yarn has been greatly exagerated and if you make no comments the realization of it will soak into them and they will be glad for you to begin work or change the conversation.

Another and important thing: *Don't talk too much while the patient is in the chair.* Every man knows how irritating it is to listen to a talky barber while getting a shave. Many well-meanig dentists might profit by the philosophical conclusion of the parrot who regretfully remarked "Polly, you talk too d— much" after having yelled "Sick him Tige!" to the dog.

Be as pleasant as a basket of chips before and after each operation, but say only what is necessary while at work. Don't be fool enough to tell the patient to make any given sign whenever it hurts—raising the hand, etc. They will fake on you every time if you do. Out of the "tail" of your eye watch the expression of your patients' eyes and you can always know the exact status of the patient's feelings. Unconsciously the eyes will "squint" when discomfort is felt, and if the burr is merely raised from contact with the dentine for a few revolutions discomfort is relieved. The patient doesn't know how you know, but soon becomes willing to trust you with the whole business, whereas by the sign arrangement they feel the operator doesn't know where he is cutting and they must protect themselves against the excruciating agony of which those first symptoms were but a prelude.

If a patient shows signs of fainting or speaks of feeling any tendency toward it, I deliberately lay aside my instruments and tell them quietly that really it would be a good thing if they did; that it would relax the entire system and relieve nervous tension and they could then much better stand the work being done afterward; that fainting is really a trivial matter and a little ice-water will birng them to. I usually tilt back the chair and insist on their fainting, and thereby arouse their antagonism and the disposition to faint immediately disappears.

These are but a few of the ways I advantageously employ the effectiveness of "mental conditions" mentioned by Dr. Keyes—and it amounts practically to what he does himself—only he is pleased to designate as "Christian Science" what I deem merely an application of force or power inherent in all the race of mankind whether availed of by the most consecrated Christain or benighted heathen, provided either has sufficient intelligence to make use of it. However, I would not have it appear I am making any fight on "Christain Science" in dentistry or elsewhere if by the practice of it such gratifying results may be obtained as I know to be true from taking advantage of "mental condition" all intelligent individuals recognize as existant. I am merely unable to differentiate between the Science a "last and ruined sinner" like myself employs, and that of one "deep-dyed in the Faith" like Dr. Keyes. I believe he has *accomplished* all he claims, for I have done the same and could cite, with convincing proof attached, a number of apparently remarkable results. The article in the Journal closes with the following injunction quoted from an eminent Boston divine—Rev. C. A. Bartol—"Let us not, with cast iron prejudice, reject whatever agrees not with our prepossessions."

To prove that I am in thorough accord with this broad-minded admonition I will say that, even though I canot differentiate between "Christain Science" and some other Sciences, I believe that "Christian Science" has its place in the world, for there are many people who can be moved by the idea that the Supreme Being is taikng a direct hand in their case whom ten grains of calomel wouldn't phaze. I believe Dr. Keyes has accomplished everything he says he has, for I know of many wonderful cures that have been performed by Christian Scientists of my acquaintance. One whom I knew well cured a case of tuberculosis but unfortunately the patient died a little later from another trouble the Scientist had overlooked. That information was given me by the Scientist himself. Another really remarkable cure came under my personal observation while practicing some years ago in Arkansas. A northern capitalist heavily interested in the construction of a new railroad spent several months personally overseeing the work. He was an ardent Christian Scientist and became much interested in one of the laborers who had one leg much shorter than the other and after talking the matter over with the man began giving him treatment. In a short time the leg began to straighten out and grow. A few weeks later the capitalist was called to New York on business for the road and told the patient he would give him absent treatment, which would be just as efficacious, and to let him know when to stop. Some time later the patient wrote him better let up on the treatment as the leg was pretty good length. In the meantime the capitalist had found it necessary to go to Europe, and left instructions with his private secretary regarding any correspondence. The secretary wrote the patient in reply to his letter if the matter was important the capitalist could be reached at a certain address in London. When the gentleman got off the steamer he found awaiting him a cablegram saying "For God's sake quit treating that leg and go to treating the other—the shorter leg is the longest!"

DENTAL CREDULITY, AVARICE AND PROFESSIONALISM.

By E. W. Ream, D. D. S., Crawfordsville, Ind.

That there exists in the dental profession a disposition to believe things on slight evidence, and to credit the alleged discoveries of the pharmaceutical, electrical and bacteriological laboratories with remedies and aids to our professional needs without ourselves going into masterly investigation, no one will deny. Neither will anyone deny that this disposition is a shackle on our profession which must be removed if we hope as a profession to rise nearer the ideal.

It would fill pages to enumerate the situations into which this dental credulity carries the practitioner. Mummifying remedies by the score lead the dentist astray from the definite and scientific information, formerly relied upon in the treatment of cases to which they are claimed to apply. AD-KON-KOR and its exhaustless list of associates thrust other claims upon him. Electrical devices in their myriad forms, enticing in their illusions, find a susceptible subject in the dentist. Even the field of Dental Hygiene is flooded with various remedies to aid the profession in the "care of the teeth," each claiming a superiority.

These so-called pharmaceutical, electrical and bacteriological laboratories give to their products a scientific hue that they may impose upon this susceptible dental credulity. To judge of their success, one need only note their financial condition; the conclusion will be that dental credulity *is* truly susceptible; and that professionalism suffers much in consequence.

You say, Lack of education! Lack of education! Yes,—But dental credulity is not confined to the practitioner who has a limited dental education. It reaches far into the ranks, and claims for its victims practitioners whose dental education should entitle them to respect, men and women who feel there is something,—that some how, will do in some way, what scientific dentistry cannot do. In this something, some how, in some way, we find the father of the ruthless, credulous, unscientific experimentation which many times thwarts the discovery of meritorious remedies that might be worked out by following scientific methods.

But dental credulity is not wholly to be deprecated. It has a legitimate field, and, when confined to this field, is a means which helps to make the symmetrical professional practitioner.

The excess it is which causes weakness, and it is this excess which deserves our notice as a profession if we would check its downward tendency.

The profession, like the individual, has an intellect, moral sentiments, selfish propensities, and the social elements, and likewise is acted upon by exterior influences. When the commercial spirit sprang into existence in our nation a few years ago and impregnated every commercial and professional field with avarice, the dental field got its full share of impregnation and we have trusts in our midst to deal with, professionally, just as the chief executive has to treat them commercially.

This avariciousness calls into action the intellect of the dentist and uses the secretive, cunning, devising part of his nature to gratify the lust for gain. It overthrows the moral sentiments and ignores their promptings to truthfulness; it leads the dentist behind his shield of dental credulity into institutions which rob him of any moral claim to professional honor.

It is when dental credulity and dental avarice lay their hands unitedly on the dentist that professional honor receives its most damaging blow. This blow is being delivered just now with telling effect. It is a blow that demands the attention of the profession; not only to note who is delivering it; upon whom in our ranks it is landing; what effect it is having upon them, and through them upon the whole profession; but also, what, as a profession, we are doing to counteract its influence.

These Trusts are bold beyond any thought of being repulsed or reproved; avarice with them has no fear or conscience and the following is a fair representation of the enticements put before dentists indiscriminately.

"Reasons why you should be a member of the Blank Association of Dentists."

1. You become part owner of the Blank preparations.—The best for the teeth.
2. You profit in the earnings from the Blank business.
3. You receive large dividends regularly.
4. Your Blank investments are absolutely safe and gilt-edged.
5. You are associated in a dentists' corporation.
6. You have an investment in a marvelously growing business.
7. Your stock participates in dividends that in the past have amounted to hundreds of thousands of dollars.
8. You share in a business that is established, one that has already attained great success.

9. Blank stock can be realized on at any time at a profit.

10. The business is based on the co-operative profit-sharing idea.

11. Blank preparations are superior to all others.

12. The business has the strongest financial and ethical support.

13. Stock is being rapidly taken by the best dentists in the United States, which guarantees its success and safety.

14. By subscribing at once you get the immediate profit of the next regular dividend.

In these "reasons" the appeal is directed straight at dental credulity and dental avarice, to the latter faculty the more strongly because it affects the purse. What does it matter to a Trust, how much the professional honor of the dentist has been sullied?

It frequently pats the dentist on his egotism with the remark, "It is not the money we want, doctor, so much as your interest and support." It has evidently studied the author who said, "Where a man's purse is, there his heart is also," more than the one who wrote, "The heart is not always with conscientiousness."

Other cases might be quoted, but this last appeal, which is made by most solicitors, "your interest and support," this is the noose which, once thrown over the dentist, strangles every atom of professional honor and binds him with that wonderful cord of credulity, and that cunning, strong chain of avarice so that he is no longer a free man, no longer at liberty to recommend to his patients things proven superior to the products of the Trust to which he is chained.

This commercializing of the profession of dentistry has the double effect of destroying our claim to professionalism and of stamping us more distinctly as mechanical tradesmen; things which have been fought against by every dental association up to the present time.

Apparently there are three avenues through which betterment can be accomplished: whether these should be employed in whole or in part we would leave for your consideration.

The dental colleges can do much for the future of the profession; they always have wielded an influence for good, and their position for the future is more potent than any other force which has to do with this part of the question. By increasing the length of the college course or by instituting a chair whose especial duty it would be to investigate the products and companies that make them, or by doing both much good could be accomplished.

For an improvement of the present situation, we must look to the legislators who could enact laws that would restrict the powers of these companies, or at least, subject them to a proof of the virtue of their output.

But for the present and the future, the situation can be most successfully handled by a concerted effort of the various State Dental Association. The creation of a board consisting of one or more representatives from each of the state associations whose duty it would be to report to the National Association as well as to their respective State Associations at their yearly sessions upon the merits of the different products of the various companies would serve to bring out the necessity for legislation, if legislation is needed in the best interests of the profession to hold these trusts in their proper sphere.

When the day dawns that Dental Credulity, Averice and Professional honor each hold their proper places, and these trusts are restricted from their bold impositions, the public will more nearly receive the honorable service from the dental profession that the laws of each state intends they should have.

THE REMODELING AND DUPLICATING OF VULCANITE DENTURES.*

BY T. EVANS JOHNSTON, L. D. S.

My excuse for bringing this subject before you is that I have been using a method of treating such cases for some years which has smoothed away many difficulties that I used to encounter in this class of work, and I thought it might be of interest if I gave you a description of the method and the cases in which I find it useful. The method is not original; but I do not think it is much used, as it was new to several of my professional brethren to whom I mentioned it. I obtained the idea from Mr. Charles Matthews some years ago, and lately in one of the journals (I think it was the *Dental Record*) an article appeared dealing with the same method, but done by means of a special flask which was advocated for the purpose. I have, however, found an ordinary three-piece flask all that is necessary. Some of the occasions in which I find this device of great use are the following: Where a full vulcanite set, upper or lower, has lost its fit owing to changes in the mouth, such as absorption of the veolus, the removal of roots, and other causes; or where a nea full set has become useless owing to the loss of the only tooth or last few teeth that held them in position. In these cases it is a great advantage to the patient to have his old set made to fit the mouth comfortably, even if it is only for a time, till the mouth is ready for a new one.

In a great many cases, however, I find that to remodel by this method does away with the necessity for a new set altogether, or even if the patient does get a new set, the remade one comes in very handily as a spare set. Also, in other cases, such as the repairing of full lowers broken in half and the making of dupli- times to refit sets by other means, but my experience was never such as to induce me to do it oftener than I could possibly help. cate sets for those who wish to have a spare one in case of accidents, I find this method gives excellent results. I used some- as I always found that the result, and also—perhaps an equally important point—the fee did not justify the time and trouble involved. But since I adopted this plan I do not hesitate to remake sets in suitable cases where it is desired, finding that I can do so very easily, and with satisfaction both to myself and the patient.

I will now try to describe the method, which consists of flasking the case in such a way that it can be removed bodily from the flask for the purpose of removing the teeth from the vulcanite and putting them back in the flask, thereby getting rid of the old vulcanite altogether. An impression of the mouth is taken in the usual way, either in plaster or composition, and cast. The case is then tried on the model. It may not go on at all or be so wobbly that you do not know what position is the correct one, but all you have to do is to cut away freely any excrescences or edges or rugæ that are in the way. If I have any difficulty in seeing what is keeping it, I wriggle the case slightly on the model, and cut it away at the white plaster marks that are left on the under surface. The great thing I find is (in the case of the uppers) to get the platine portion of the case lying as flat as possible, for if you get this right you may be sure that the rest is, as it is not the palate where changes occur in the mouth. All this can be done in a few minutes. The case is next waxed on to the model, and wax run into all the places where you wish to fill up; but you do not need to be particular to have wax all the way under the case so long as the edges are tight to keep plaster from running in between it and the model. Any teeth that require to be added are put on with wax, and any places where you wish to extend the case or add are waxed up. You may wish also to cover exposed pins etc. The model with the case on it is then placed in the lower part of the flask, and plaster brought up to the gum edge. The middle part of the flask is then lubricated inside with oil, vaseline, or soap, and placed in position. Plaster is then run round the faces of the teeth and gum and crowns of the teeth. The plaster is then trimmed up, smoothed, and lubricated, the palatine portion which remains filled in with plaster, and the top of the flask put on. Before filling in the palatine portion, you may make a polishing plate if you wish, or you can do so afterwards. When the plaster has set, and the flask has been opened, the case will be found imbedded in a ring of plaster in the middle part of the flask. This having been well lubricated, the plaster with the case can be removed. The ring of plaster is then broken into three or four sections, and the case liberated. These sections of plaster are then put back into the middle part of the flask, where they were before. The top part of the flask is then put on, and the lower part with the model used as the plug; or it can be packed the other way if desired. The teeth are then removed from the case, and fitted into their places in the plaster. If the back teeth are diatoric, and the vulcanite will not come out of the holes, I have found that a very good way is to place them in a crown or inlay furnace, and burn it out. I heat them till they are red-hot, and they come out nice and clean. If some of the teeth get broken in removing them from the vulcanite, all you have to do is to fit in other teeth as like as you can get them. If, in opening the flask, pieces of plaster get broken from the model or from any other place where they are of importance, I find that if they are cemented on with thin cement, such as you would use for setting an inlay or even thinner, they will stand heating and boiling and squeezing without shifting.

To make a duplicate of a set you use exactly the same method, flasking the case to be duplicated and fitting in other teeth, which do not need to be *exactly* the same as long as they can be fitted into the impressions in the plaster. In this way you get an absolute duplicate which will feel exactly the same as the old case in the mouth, the vulcanite being of the same dimensions, which would not be the case otherwsie. The bite will also feel exactly the same. I have not found the fitting of the teeth as difficult as it might at first appear. It also takes far less time and trouble than any other way I have tried. The advantages of this way of refitting a case are that you get rid of all the old vulcanite, thus making the case as strong as ever. It is a great saving of time, as all you have to do in the surgery is to take an impression of the mouth, and the whole operation takes only about three hours from start to finish in the workroom. There is no trying in necessary, thus saving your own time and the patient's. You can send the case, if the patient cannot come back, with every assurance that it will be all right. I have often taken the impression and desired the patient to send me the case from home—returning it when finished—thus enabling him to avoid an appearance in public without the teeth. I have frequently found that the remodeled set gives more satisfaction than a new one would do, especially when the patient likes the appearance of the teeth and the bite is comfortable. Patients who cannot afford the fee for a new set are often very pleased to get their old set made to fit comfortably at a smaller fee.

For cases that are smashed in two in the workshop, perhaps while they are being polished by a careless apprentice (a full lower often suffers in this way), all you have to do is to wax the broken ends together, replace it in the flask, and treat it by this method. In this way you get rid of all marks of repairing, which would be so objectionable in a new case, besides weakening it. Then again, for patients that have recently had the mouth cleared of stumps and bad teeth, and cannot wait without teeth very long, instead of making a so-called temporary set (which the patient never realizes is any trouble to make, and perhaps naturally grudges to pay much for), I make the set with a view to remodeling it afterwards, and putting gum in front if necessary.

I could go on multiplying examples of where I find this method useful, but I think I have said enough to show what I mean; and I am sure that any of you who have not tried it will find it of service in a great many cases which occur in everyday practice.—*Dental Record.*

VULCANIZABLE GUTTA PERCHA FOR REPAIRS.

I prefer vulcanizable gutta-percha to rubber for positions difficult of access in repairing, because of its plastic properties. It works under the warm spatula very much like wax, while the rubber is unyielding and elastic and will not stay where you put it.

My first step in repairing a denture is to assemble the parts retain them in position with wax; oil the plate slightly and make a model upon it. When the plaster is set, remove the model and prepare the parts as you would where rubber is altogether used. Now restore the part with gutta-percha, which cannot be reached to pack after flasking. Gutta-percha is especially suitable for dentures where gum sections are used, and in which we frequently find cracks running diagonally upward behind a section. In such cases cut away the edges of the break with a round bur, roughen the surfaces and fill completely with the gutta-percha. In the use of this material, I prefer to bevel the margins and roughen them. The adhesion is then perfect.

The gutta-percha may be veneered with pink rubber if desirable. Always pack the accessible parts, where pressure is possible, with rubber, as it is stronger than gutta-percha when vulcanized. When both are used in the same case the point of union is not noticeable.

A single tooth may be replaced in a denture by simply cutting away the part as in ordinary repair; roughen the surface and fill the space with vulcanized gutta-percha. Warm the tooth and press it into position, and trim away the surplus gutta-percha with a warm spatula. This may be buried in the flask without separation and vulcanized forty minutes at 320 degrees, and constitutes a handy way of quick repair.—*Dr. W. A. Brownlee, Dom. Jour.*

A CAUSE OF PULP CONGESTION.

The subject of pulp-capping, like Banquo's ghost, will not down. The necessity for preserving this organ when exposed continually appeals to the progressive mind; and though failure after failure has been the history of this operation, with comparatively few exceptions, there are men who refuse to be convinced that it cannot be successfully accomplished under favorable conditions.

So far as I am aware, the central thought has been to produce a substance to be placed in apposition to the pulp of such remedial and preservative character that this organ will continue its function in a healthy state, or else to so fix a concave disk of metal, the edges of which, resting on the dentin around the point of exposure, will protect it from actual content with foreign substance, thereby claiming to save it from destruction. So far as I know, a cause for hyperemia and death of all posed pulps has been entirely overlooked, a condition that is not overcome or removed by any known method of capping. This cause is the irregular surface produced in the wall of the dentin containing the pulp. This chamber is highly polished—lubricated to a greater or less degree by an exudate, which is indicative of nature's provision for protecting an easily irritated member. Hence, with an interruption of the continuity of this chamber, we find a condition that is directly the reverse of the smoothness originally provided. The edges of the break, even should they be smooth, will act as an irritant under the constant arterial pressure and stasis in the pulp circulation must ensue. Just how far this might be retarded by a palliative covering I do not know, nor do I claim this broken wall to be the *only* cause for the almost constant death of exposed pulps; but I do claim that it is an ever present condition, which will in the vast majority of cases *in itself* produce a congestion that necessarily leads to the death of this organ. I am of the opinion that all our efforts at conservation of exposed pulps should recognize this cause of irritation, for I am convinced that no degree of success will or can attend this operation unless the continuity of this chamber is restored and a perfectly smooth and compatible surface be left against which the pulsating pulp can rest and remain in a physiological state.—*Dr. M. C. Marshall, Era.*

AFTER TREATMENT.

For some years the essayist has been serving on the staff of a hospital, and we have had several cases there as the result of shock and septicemia following the extraction of teeth. There seems to be a rather common opinion that the extraction of any number of teeth is an easy procedure on the part of the dentists, and the after-treatment and results a something that needs no particular attention on the part of the patient. My candid opinion is, that this opinion on the part of the public never came by intuition, but was rather the result of the practitioner's education and action in such matters. If the general surgeon should perform an operation of the simplest kind, and afterward fail to watch, or even prescribe for it, if need be, for a certain length of time, what would the public think of him? To say the least, he would be considered careless. My notebooks have a record of several conversations with educated and thoughtful physicians who have frequently been called in to attend patients after the extraction of teeth. Time forbids the relation of these cases and the honest opinions of the cause. My logic would evolve this reasoning: they were not cases of infection from septic hypodermic points or instruments, but simple "Simon pure" cases where nothing was prescribed for oral prophylaxis, and no request made on the part of extractor for a return of the patient for further observation and treatment. A logical reasoning would further evolve the thought that the cases where the physician was called in only the more emphatically proved to the mind of the patient that the dentist was the fellow to employ to "pull," but the physician to treat. An analogous reasoning might bring forth the fact that one was considered a tooth carpenter and the other a tooth doctor. Now all this has a cause and a remedy. It is my practice to impress on my patients the necessity of using a mouth-wash, and in certain well-defined cases the need of further treatment either at the office or the home. Time was when I always wrote a prescription for them, but I found many of them neglecting to have the same filled at the chemist's; and so now I invariably put up what is needed in my own office, and the cost is so small that it is hardly worth considering. The mere fact of a proprietary production having a pleasant bouquet and taste does not necessarily mean that it is efficient. My most common wash is of carbolic acid (Scheuring's) two parts, alcohol two parts, glycerine one part. For flavoring you may use oils of peppermint, wintergreen, sassafras or cinnamon. If you wish to impart a pleasing color, add a little red dye. A spoonful of this mixture to one-half pint of water will be found to be about the right proportion. An experience of many years with this preparation has not shown any need of a change. In case you wish an astringent effect, add a small quantity of either fluid red gum or glycerite of tannin. For any case remanding an antiseptic this preparation can be used with results sure to be satisfactory.—*Dr. A. J. Flanagan' Extract Alumni Anunal.*

CATAPHORESIS NOT A DEAD ISSUE.

A prominent writer in one of the leading journals in commenting upon cataphoresis, made the statement that in every office the outfit for cataphoresis has been relegated to highest unused shelf in the laboratory.

Now it is not the intention in this essay to deny that such is the case in most dental offices; nor, is it to be said that cataphoresis is now in general favor.

A perusal of Morton's treatise on cataphoresis will show any number of cases reported where excellent results were obtained. Why can not the same results be obtained today?

The writer in securing the opinion of a number of prominent dentists, as to the apparent apathy of the dental profession, to this method of procedure, which at one time occupied as much space and attention of the dental journals, as porcelain does today; the universal opinion was that the majority of dentists lack a thorough knowledge of electricity and its phenomena and that the additional time required for each operation was not willingly given by the operator, nor willingly paid for by the patient.

The following is an extract from a letter received from Doctor Kirk, editor of the Dental Cosmos, when written to, as to his opinion, of cataphoresis: "I have noted with some interest the opinion of a number of operators, experts in the use of the cataphoric method, and their hypersensitive dentine, being practically certain in its results, but open to the general objection that it sometimes takes considerable time in its application, and is therefore not economically applicable to all cases, but in as much as there are a large number of cases in which nothing else acts so well, especially in cases of very nervous and timid patients, it has been found to be indispensible in the treatment of such cases by those who have had wide experience in its use, and whose opinions I have sought on the question you ask." Dr Kirk also referred to Dr. Rhein, of New York City, who was having excellent success with the use of soluble needles in connection with the cataphoric outfit.

We had occasion to apply a volt-meter and am-meter to the cataphoric battery of one prominent dentist who condemned cataphoresis from the first; and, found that the positive and negative poles of the battery (which was the best type) had been accidentally connected when the apparatus was first installed, and the battery discharged before it had been put to a practical test. The operator in this case did not use a mil-ammeter, else the absence of current would have been shown.

If cataphoresis is successful and the patient wishes it used and is willing that the operator should be paid for the extra time consumed by the use of same, it is our opinion that it behooves us to continue its use in some cases.

It is not necessary in this article for the writer to give, in detail, a number of successful operations in which the patients were delighted with the procedure, who, formerly, han been very nervous and fearful patients. Some may claim that the effect was purely mental and may have been produced by other and simpler methods. In answer to this it might be said that the effect of banishing the pain of excavating was the one desired, and it does not matter whether it be produced by the effect on the mind or the real efficiency of the cataphoric method. —*Florida Dental Society Paper, Dr. Carroll H. Frink, Fernandina, Fla.*

GUTTA-PERCHA CEMENT.

I wish to add one word in favor of Doctor Evans' gutta-percha cement. I have used it since it came out in long bridges and single crowns, and have had considerable trouble; but it worked out all right. If I may make a suggestion to those who have not used it, it would be this: In setting with gutta-percha cement you need to have a pillar in the center of your crown. If you do not, the gutta-percha will gradually press out of shape. In the course of three or four months it will work up under the gum tissue and produce gingivities, sometimes quite acute, because it does not dissolve, and the gum, if forced too high, will not tolerate it. But if you place a little cement in the grinding surface of the crown, while you are fitting the gutta-percha the first time, the root being wet, you force it into position and the cement will set; remove and add what more gutta-percha you need, and when your bridge is finally set, the cement pillars rest upon the posts and prevent any movement of the bridge toward the gum tissue, thus obviating this difficulty.—*Dr. Ferris, Items.*

Adaptation of Matrix to Cavity.—Press the matrix material to general form of cavity; then stretch loosely over it a strip of thin rubber dam and lay on it, over the cavity, a small quantity of ordinary putty, rather stiff. Press into the cavity carrying it to the bottom, and with considerable force carry it into every part. Release the pressure and the elasticity of the rubber will lift the putty from the cavity and leave the matrix in position.—*Items of Interest.*

A Vulcanized Pivot Crown.—Choose a tooth with horizontal pins. Take a piece of 26 guage platanoid wire, flatten one end and file notches on each side that it may be fitted in between the pins of the tooth, which should be bent over the wire, thus attaching it. Adjust properly to the root, filling the space between end of the latter and the facing, with wax, contouring to suit. Trim off surplus wax, invest in mould and remove wax. Pack with white rubber and vulcanize, trim and polish. By this process a perfect joint is made.—*Hints.*

Taking Lower Impressions.—When taking an impression of lower jaw, in either wax or modeling compound it is necessary that the cheek on each side be pulled out by inserting the finger along the buccal side of the impression tray so as to lift out the fold of the muscles that may have been caught under the edge of the tray and material. The patient should also be instructed to raise the tongue from the roof of the mouth and extend it, so as to prevent the impression from impinging upon the muscles beneath the tongue.—*Brief.*

Cement and Amalgam Combined.—Cement and amalgam used in combination, beginning first by covering the dentine with a layer of sticky cement, afterward nearly filling entire cavity (keeping the margins clean) with a mixture of cement and amalgam, and at last placing a veneer of amalgam over all, completing the entire operation before the cement becomes hard, gives a filling that protects against outside influences, restores the tooth to comfort, requires no special undercuts, and is one that will wear as long as any amalgam filling and look better.—*Review.*

ALUMINUM SOLDER.—A very good solder for aluminum and one which will not undergo rapid change in the mouth may be made as follows:

R.	Aluminum	60 parts
	Zinc	10 parts
	Phosphor-tin	30 parts

Organic compounds all the way from vaseline to lemon juice have been recommended for use as fluxes. One of the best that I know of and one that works very well with the solder just mentioned is stearic acid or common stearine.—*Wes. Jour.*

Porcelain Cusps and Shrinkage.—One feature has been overlooked in discussing cusp carving; that is, shrinkage. When we take into consideration the fact that even the highest grade porcelain will shrink one-fifth more than the low fusing one, that is a very important feature. My method has been to make a fold of plaster somewhat larger than I want the tooth to be, pressing the material in well, and when this is dry open the halves of the plaster; one then has the porcelain more easily formed than by carving, and more accurate, at the same time allowing for shrinkage.—*Cosmos.*

RESTORATION OF CONTOUR WITH BRIDGES.—When from loss of one or more of the anterior teeth in the upper jaw there is considerable absorption, the bridge should have porcelain gum or pink rubber to restore the contour and sustain the lips. The old plate gum teeth can be used to great advantage. When a bicuspid and molar are lost, with the usual absorption, and the adjoining molars and bicuspids are sound, I have found that a rubber bridge with properly made and adapted clasps auswers every demand, obviating the grinding down of the teeth.—*Dr. W. H. Shulze, Western Dental Journal.*

PROPORTIONS OF WATER AND PLASTER FOR IMPRESSIONS.—An ordinary mix of plaster of Paris suitable for a good-sized impression requires about 40 cc. of water and 55 gm. of plaster. To the water, before the mix is made, should be added 5 gm. of potassium sulfate, to be thoroughly dissolved. The plaster is then slowly sifted into the water and the spatula carried slowly through the mass and around the sides of the bowl with a sweeping motion, just enough to insure a uniform mix. Then place quickly in the tray, and if too soft for introduction into the mouth, wait until it has set sufficiently to meet the requirements and then proceed.—*Dr. J. H. Prothero, Cosmos.*

Tipping Teeth.—Prepare the tooth by grinding as is ordinarily done and burnish pure gold backing to position on the tooth, allowing the backing to project beyond the labial or buccal surface of the facing at the occlusal end. Hold the occlusal end of the tooth, with backing in position, against a flat surface having a right angle corner, such as a drawer in the bracket table, the labial surface of the facing being held even with the upper surface of the drawer. The projecting gold can now be turned down till it rests upon the upper flat surface. Burnish the gold well against the facing and contour the tip if necessary. The case is now invested and 22k. plate is flowed over occlusal surface and tip as heavy as desired. After the crown is soldered grind away the gold that overlaps the edge in front, and this will produce a solid 22k. tip. The same method can be adopted for bicuspids and molars in bridge work. Flow 22k. plate over the whole surface of the backing, making it heavy enough to protect the facing. Make lingual cusps, articulate and attach with solder.—*Review.*

Immunity of the Tissues of the Dental Cavity to Autoinfection.—Dr. R. H. M. Dawbarn stated as his opinion that the explanation of the well known immunity of the tissues of the oral cavity to autoinfection lies in the fact that from birth until death the region under discussion is vaccinated, so to speak, with ptomains and toxins, the products of the life activities and death decompositions of germs normal and native to that region; and that because of such vaccinations, the outcome of the numerous slight lesions so frequently occurring, the flesh thereabouts is in some way made better able to combat and overcome any ill results when greater wounds are received. Then, too, it is a fact worth noting that each healthy individual's saliva is not dangerous to himself, even elsewhere than the mouth, wounds or fractures, though this secretion would be perilous to another individual. Probably the reason for this is the one already mentioned—a continual vaccination. We have all seen wounds upon the hands of street urchins sucked and washed clean by their spittle. just as a dog cleanses himself, with no ill results.—*Digest.*

BOOK REVIEWS.

Lippincott's Medical Dictionary—A complete Vocabulary of the Terms Used in Medicines and the Allied Sciences, with their Pronunciation, Etymology and Signification. By Ryland W. Greene, A. B., with the Editorial Collaboration of John Ashhurst, Jr., M. D., Geo. A. Piersol, M. D., and Joseph P. Remington, Ph. M., F. C. S. Revised Edition, Illustrated. Philadelphia: The J. B. Lippincott Co., 1905. Price Half Morocco $4.50.

This work is the successful result of an intelligent effort to make a practical and useful medical lexicon. It is convenient in size, concisely arranged and so comprehensive as to furnish a reasonable assurance that one's search for a word will not be fruitless.

Complete information is given concerning every medical term which has a legitimate claim to inclusion, so as to provide for the most entended needs of the student, physician or special investigator.

The chief value of a medical dictionary lies in its power of defining terms in accurate and intelligible language. Much attention has in this work been paid to the wording of definitions. In addition to the mere definition, the more important headings have received treatment of a descriptive and encyclopedic character: thus under important organs and tissues is given an outline of their structure and function; under each drug, its action therapeutic use, official preparations and doses; under the chief diseases some account of their symptoms, causes and treatment.

From every viewpoint this book is a credit to those who have had its preparation in charge, and it will be found an invaluable addition to either a medical or dental library.

The Diary of a Late Physician—Being a New Edition of Selected Passages by Samuel Warren, D. C. L., F. R. S. Arranged by Charles Wells Moulton. Volume VI of the Doctor's Recreation Series. The Saalfield Publishing Co., Akron, Ohio. 1905. Price Cloth $2.50.

The author of this work Dr. Samuel Warren was one of the most successful writers of his day, rivaling Dickens and Bulwer in the hearts of the English public. This work originally appeared in Blackwood's Magazine (1830-1831) increasing its circulation prodigiously. When published in book form later, it went through many editions, but has until now long been out of print.

Dr. Warren, the author, is a most interesting character. He was both lawyer and doctor. He made a competence early in life, not by practicing either of his professions, but by writing about them. His "Ten Thousand a Year" is very largely a study of legal questions, while the present volume embodies his impressions of the practice of medicine.

The revision has been carried on along the lines adopted by Cyrus Townsend Brady in the recent edition of "Ten Thousand a Year," brought out under the title of "Titlebat Titmouse." Great care has been taken not to omit anything of interest to the physician of today. The work will be found very interesting by dentists as well as physicians.

The Blues (Splanchnic Neurasthenia), Its Causes and Cure. By Albert Abrams, A. M., M. D. (Heidelberg), F. R. M. S. Consulting Physician, Denver National Hospital for Consumptives, The Mount Zion and the French Hospitals, San Francisco, etc., etc. 8vo., 250 pages. Illustrated. Cloth, $1.50. E. B. Treat & Co., 241 W. 23rd St., N. Y.

This volume directs attention to a new and heretofore undescribed variety of nerve exhaustion, which the author has designated Splanchnic Neurasthenia. This special form of nerve weakness is characterized by paroxysms of depression of varying duration, and is popularly known as "the blues."

Its recognition and the factors involved in its causation, implies ability to cope with the evil and to offer to sufferers not only amelioration but a cure. The author states that after many years' experience with neurasthenics he knows of no variety of neurasthenia which is more amenable to treatment than the splanchnic form. He states that it originates in a congestion of the intra-abdominal veins.

Among the many resources of Nature to combat this tendency, the vigor of the abdominal muscles is paramount. The tonicity of the muscles in question is impaired by mal-hygienic clothing, occupation, disease, lack of exercise, and a host of other conditions.

The book will be found both interesting and instructive.

WANTS—FOR SALE—FOR EXCHANGE DEPARTMENT.

Advertisement inserted under this head cost one cent per word, no advertisement to be less than twenty cents.

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FOR SALE—One foot bellows for blowpipe. In good working order except it needs a new rubber disk. $1.00 takes it. Address *G, *The American Journal of Dental Science,* Madison, Wis.

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Albert H. Ketcham, D. D. S., Denver, Colo.
Geo. S. Martin, D. D. S., L. D. S., Toronto Junction, Ontario.

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THE DENTAL PROFESSION AND THE SANITOL COMPANY.

During the past eight or ten months we have published numerous articles, papers and letters in regard to the Sanitol company.

There are some four thousand dentists who are now stockholders in this company, many of whom have considerable cash invested in stock, and all being financially interested in its welfare.

The matter published in the past has tended to unsettle and to raise the question of the value of the stock in the minds of the stockholders, while at the same time it has not lead to any definite point, and in view of these facts the editor of this Journal will make the trip to St. Louis in the course of a week or ten days and personally look over the situation.

He has been assured by the president of the company, Mr. H. C. G. Luyties, that every facility will be afforded for a full ininvestigation of the books and other papers of interest, and the matter will be sifted fully and thoroughly.

In the October issue a report of the investigation will be published in full for the enlightenment of stockholders, and we trust it will settle definitely the question of the value of this stock as an investment for dentists.

As has been repeatedly said The American Journal of Dental Science is absolutely impartial in this matter and if it is found that the affairs of the company have been mismanaged we shall say so frankly while if the opposite is true and the company appears to be on a sound, satisfactory basis we shall say so with equal frankness.

INTERESTING CASE OF NECROSIS.

By Dr. J. P. Ruyl, Brooklyn, N. Y.

Read before the Second District Dental Society, March, 1905.

A little patient came to me when he was six years old. Previous to this, nine months perhaps, he contracted diphtheria, but was otherwise a perfectly healthy child. Antitoxin was used. After recovery he was vaccinated and from that time, ill health began. In about two months he had convulsions with pains and swelling of the gums and was treated for ulceration of the gums for about six months with no benefit, the swelling continuing until the whole face, almost to the clavicle and back to the ears was involved, the left side being worse, with one eye closed. The parents then employed another physician who brought him to me.

His temperature was 103¾ and pulse 134. He appeared stupid. There was profuse salivation and extreme odor. The case acted like salulitus. Several teeth had dropped out, some had been extracted and more were loose. I removed three molars and some particles of loose process. After this, the gums did not heal and there was discharge from the exposed process. An abscess appeared under the left mental proces. He then went to a hospital where he underwent an operation lasting three hours, in which the left side of the neck was opened along the jaw from the mental foramen to the angle, the outer table of the jaw was removed in flakes and at the angle a piece of bone one inch square and one-eighth of an inch thick, which was black. Most of the coronoid process came away black and was pulled out with forceps.

Two months later, the same man operated again on the right side where there had appeared another discharging abscess. This side was opened along the border of the jaw bone, some pieces of the outer table were removed, and the posterior part of the ramus up to the condyloid process. This was all black, surrounded by pus and came away readily, being pulled out with tweezers. A dentist was present and assisted with the chisel in removing most of the permanent molars, some process and a portion of the coronoid process.

Both the surgeon and dentist who operated said that he would be better off dead and almost hoped he would die on the table. They stated that the removal of the entire lower jaw would be necessary for the recovery of the patient. He left the hospital and after being treated medically for four months, during which time there were discharging abscesses on both sides, he came to me again and I operated, removing from both sides every particle of process, a flake of the outer table of the jaw its entire length, and every remaining undeveloped permanent tooth except two incisors, the process around which seemed perfectly healthy. Those teeth I removed were riding in little sockets of pus and were easily lifted out with the tweezers.

After this operation his general health inproved, the temperature dropping in three days to 99 4-5 and pulse to 108. Everything healed except a fistula on the left side from which for a time there was a discharge of thin, curdy pus and an occasional spicula of bone. The swelling gradually disappeared and in two or three months the fistula closed and I made him a plate which he now uses to advantage.

The causes might be due to animal poisoning or scrofulus diathesis, complicated by vaccination or mercurial poisoning, although some medical authorities say it is not possible to salivate a child, while others claim that salivation might show months and sometimes a year later and it might have been brought on in this case. There is no history of syphilis in the family; both parents are healthy. The mother had six children and no miscarriages. A brother and two sisters are living and healthy, two brothers having died with diphtheria at the time when this boy was sick.—*Items of Interest.*

THE SITUATION IN WISCONSIN.

By Henry L. Banzhaf, D. D. S.

Addressed to the Executive Committee of the National Association of Dental Faculties.

For your information I herewith submit this statement of facts with correspondence relating thereto. I have also made a separate report of educational conditions here in Wisconsin, as they affect our College, to the Committee on Law. Having only one copy I am obliged to omit in this report to you, the findings of fact and conclusions of law handed down by Judge Williams, a copy of which I am sending to the Chairman of the Committee on Law. We are not seeking assistance, but I feel that it is my duty to make this report, as a matter of general information, with permission to make such use of it as may appear wise and just.

On or about the 2d day of August, 1904, I wrote a letter to Dr. A. H. Peck, Chairman of the Ad Interim Committee of the N. A. D. F., asking for his opinion as chairman, as to the status of some students in our college whom we had been instructed by the Faculties Association in session at Asheville to graduate after three years of additional attendance. In this letter I called the attention of Dr. Peck to the pages of the proceedings of the Asheville meeting on which the detail of this matter could be learned and the manner in which it was disposed of. The students had attended the second year at our school in accordance with the instructions we had received from our National body. In view of the action taken by the N. A. D. F. at St. Louis in 1904 and in view of the fact that these students presented evidence to me showing that they could graduate from other colleges by attending one more year, I wrote the letter to Dr. Peck, marked Exhibit "A," copy of which is hereto attached. Dr. Peck's reply is also hereto attached. Upon receiving this information from Chairman Peck the facts were communicated to these students by letter informing them that they would be admitted to our senior class, and would be graduated with the class of 1905, provided they passed our final examination. This is proved by Exhibit "C" hereto attached. The students entered in full expectation that we would carry out the terms of this contract. This we were preparing to do when, on the 6th day of February, 1905, I received an inquiry from the Wisconsin State Board of Dental Examiners respecting these men. This is proved by a copy of the letter received and marked Exhibit "D." I made no reply to this letter in writing, but a number of conferences were held between the Secretary and President of the Board and myself and counsel for the college, all of which were without avail. This is proved by a letter received from Secretary Wright, a copy of which is hereto attached and marked Exhibit "E." Upon the receipt of this letter a meeting of our Board of Trustees was called, and this matter was carefully considered, and it was then decided that the college would observe the instructions of the board and not graduate these men. Acting on the advice of counsel, because of the discontent which this information spread in the ranks of our student body, we allowed these students to take the final examinations, hoping against hope that the matter might still be amicibly arranged. In the latter effort, however, the college failed. The students passed their examinations, but were not graduated. Commencement day was on May 15. A few days after that date Robert A. Burg, one of this number of students who had earned a second grade teacher's certificate during the fifth month of his first year's attendance at college, brought an action against our school. The college engaged one of the most competent attorneys in the city of Milwaukee, Mr. Henry J. Killilea, and instructed him to espouse the cause of the college to the best of his ability, the college rendering him every assistance as to statements of fact. Furthermore, the college tendered the defense of this action in whole or in part to the Wisconsin State Board, on the ground that this action was brought because we had strictly observed the orders of the board. This is proved by copy of a letter addressed to the board and marked Exhibit "F." The board sent word through its attorneys that it, the board, had no interest in the action. This was shortly before court was convened. Counsel for the college then requested that the court grant one week's time, on the ground that the college felt that possibly the State Board did not understand or realize its duty in this matter.

This request was granted by the court. Another effort was then made by the college to induce the board to take up our defense, which, however, the board declined to do. This is proved by a copy of a letter received from the board and which is marked Exhibit "G." The college then proceeded to defend itself to the best of its ability, taking the board's view of the situation as we understood it from the limited information which we had been able to obtain. The case was decided against the college. This is proved by copy of judgment and findings of fact and conclusions of law and order for peremptory writ of mandamus, which is hereto attached and marked Exhibit "H." The college thereupon succeeded in obtaining a stay of proceedings from the court of thirty days, within which an appeal to the supreme court might be taken. On June 26, 1905, three graduates of the class of 1905, among others, appeared before the board for examination. These graduates had attended one year in some other college, for which reason they were disqualified to receive licenses without examination. When the class was ready to be examined the secretary of the board called them aside and informed them that they were eligible to examination because the Wisconsin State Board of Dental Examiners had that morning declared our school not reputable. This information was immediately conveyed to me by the graduates, whereupon I called up J. J. Wright, secretary of the board, on the telephone, stating what had been reported to me concerning the reputability of our school, and asked him for a confirmation or denial. He. Wright informed me that the board had taken action as told me by the graduates. He, however, declined absolutely to assign any reason for this action. A few hours later one of the graduates returned, and informed me that the secretary had made the statement to him that cause of the action was the reported graduation by the college of the six men in question.

When the board was informed that the college had not granted such diplomas, and that not even Robert A. Burg had a diploma, pandemonium apparently reigned at a subsequent session of the board. About that time, which was only a few hours after the passage of the resolution referred to, I called up the secretary on the telephone for an explanation. He said he could make no statement whatever. The next day we learned that the first resolution had been rescinded. This is proved by a copy of the minutes of the proceedings of the board on June 26, a copy of which is hereto attached and marked Exhibit "I." On that date a letter from the secretary of the board, addressed to me under date of June 27, was received, a copy of which, together with my reply, are hereto attached and marked Exhibit "J." On June 28 another letter was received from the secretary of the board, addressed to me, a copy of which, together with my reply, ale also hereto attached, and marked Exhibit "K." On June 29 counsel for the college made a request for a conference, which is proved by a copy of a letter addressed by counsel for the college to the secretary of the state board, a copy of which is hereto attached and marked Exhibit "L." The request was granted, and the conference was held in the Hotel

Pfister on the evening of that day. The college practically prostrated itself before the board, and I made the statement that if the board would help us we would appeal the Burg case to the Supreme Court. An informal statement made by the secretary of the board to counsel for the college, together with personal conclusions of our own, made it appear that if the college appealed the Burg case the state board would feel satisfied and grant licenses to the other members of our graduating class. In this, however, we were misled, for in a letter received from the secretary of the board addressed to the college under date of July 1 the final action of the board was made known to us. A copy of this letter is hereto attached and marked Exhibit "M." Exhibit "N" is a copy of the letter addressed to one of our graduates by the secretary of the board practically imparting the same information. Exhibit "O" is a copy of a letter addressed to me from Dr. C. C. Chittenden as Chairman Committee on Colleges, N. A. D. E., under date of May 30, 1905, being *fifteen days after Commencement Day.* I respectfully call your attention to paragraph 4 of this letter, comment on which I feel is unnecessary. We are now engaged in litigation, which means not only the very life and existence of our school, but which also involves a fight for a great principle. In this we are confident of success, and pending this now only ask your moral support.

(The above was presented to both the National Association of Dental Examiners and the Faculties Association. The salient features of the situation are as follows: On May 15 the Milwaukee College held its commencement. On May 30 Dr. Chittenden, as Chairman of Committee on Colleges of N. A. D. E., wrote to Dr. Banzhaf that his school would be placed on the recommended list. On July 1 the secretary of the Wisconsin Board notified the school that the board declared it to be disreputable. On July 24 the school was reported favorably to the N. A. D. E., and on July 25 it was stricken from the list. The action of the N. A. D. E. and of the Wisconsin Board are certainly difficult to comprehend. The exhibits mentioned are copies of letters and papers confirming Dr. Banzhaf's statement. —Editor.)—*Items of Interest.*

MANIPULATION VERSUS MEDICATION.

BY DR. F. G. WORTHLY, KANSAS CITY, MO.

The above caption was chosen not because it exactly expresses the theme to be discussed, but rather on account of its alluring alliteration. The thought in mind was to make a plea for more careful attention to the details of manipulation in certain operations, and to sound a warning against blind reliance on drugs and chemicals to do work that should be done with instruments.

The evil of undue reliance on medication is growing. More and more are the young men of the profession inclining to rely on drug action to take the place of skilled operations. One has but to glance at the advertising columns of any dental journal to note this fact. In every issue are advertised "cure-alls' and "save-alls" more numerous than the breakfast foods of commerce. The happy dentist is told that he has only to seal a little of Dr. Blank's nostrum in the abscessed tooth, and in a week that tooth will exceed all the others in health and usefulness; or to put a small quantity of the preservative of some one else in contact with a pulp which is the seat of acute inflammation, and immediately that pulp becomes either a quiet and obedient servant or an aseptic and ideal root-filling.

If the exploiting of these methods were confined to the advertising page alone, perhaps little harm would result; but in the literary columns of the same journals may be found articles gravely devoting an entire page to advocating the use of glycerine, cassia oil, or some other agent as a solvent for cocaine in pressure anæsthesia, or to describing in detail the therapeutic treatment of pyorrhea, without a word as to the essential instrumentation which must of necessity precede the application of therapeutics.

But it was not the intention of this article to deal wholly in generalities, but to take a few specific instances. Let us first consider the manipulation and therapeusis of pressure anæsthesia. If a tooth pulp is to be desensitized by the introduction of cocaine under pressure, the first step is a thorough opening of the tooth so that pressure can be applied directly over the pulp, and preferably in a line with the long axis of the tooth. The second step, if the opening is through a carious cavity, is the removal of all carious dentine. The third step, if the cavity is not already of the proper shape, is to so shape it with temporary cement walls that the anæsthetic solution can be confined under pressure. The fourth step is a thorough sterilization of the cavity. This much having been accomplished, if the pulp be not unduly congested, cocaine may be applied under pressure with almost a certainty of success. And it makes little, if any, difference whether the solvent be water, glycerine, acetic ether, chloroform, or an essential oil. In fact, the proper preparation of the cavity and application of the pressure is of so much more importance than the drug used that it has been demonstrated that the cocaine itself is not a necessary factor. I have myself desensitized and removed pulps painlessly under pressure, using pure chloroform, carbolic acid, or acetic ether, without the admixture of any cocaine whatever.

Another instance. Consider the treatment of alveolar abscess. Too often it is the custom to begin the treatment (if the abscess have a fistula discharging on the gum) by forcing some solution through the tooth and out at the fistulous opening. This operation may be all right when the right time comes; but that time is certainly not until the pulp chamber and canals have been thoroughly cleaned mechanically and as thoroughly sterilized therapeutically. As the cause of the abscess originally was the passage of infective material through the apical foramen of the tooth, it seems obvious that it is criminal carelessness to spread the distress by forcing any more irritant material into the already highly irritated area. Again, consider for a moment the numerous treatments for that bugbear of dentistry, pyorrhea alveolaris. There is scarcely a drug in the Pharmacopœia, from sulphuric acid to castor oil, that has not, at some time, by some one, been touted as a specific for this condition. Why is it that only occasionally, and very occasionally, is a man found who is even fairly successful in combating these pericemental degenerations? I say without hesitation that it is because it is only occasionally that a man is sufficiently skillful, and sufficiently willing to give the time and care necessary to the surgical and operative measures necessary. If every particle of irritant and foreign matter were removed from about the tooth, more than seventy per cent of the cases of socalled pyorrhea would get well of themselves, with no other therapeutic treatment than an alkaline mouth wash. I do not wish to be understood as decrying the use of medicinal agents. We all recognize their absolute necessity in our practice. It is the dependence on such means to the neglect of surgical procedures that I would deplore. Successful practice means careful and thorough manipulation, and no amount of therapeutic treatment can supplant it or take its place.—*Western Dental Journal.*

DENTAL HINTS.

In drilling into an abscessed tooth it should be steadied by pressing it to one side against the wall of the socket, very gently at first and finally very firmly. If pressure is applied slowly, but with increasing force very little pain is felt.

Vaseline for Lubricating.—Use vasaline on your hand-piece. It will not "run" like oil and soil the bur on your fingers. Also use vaseline on the rubber dam and it can be more easily adjusted.—*Dr. A. W. Thornton, Dental Review.*

Gutta-Percha.—Gutta-percha undoubtedly has great tooth-saving properties—properties not equalled, I think, by any other material. Its chief disadvantage is that it has not the hardness necessary to resist abrasion, but on protected surfaces, leaving out all esthetic considerations, it certainly has better tooth-saving qualities than any other substance.—*Dr. W. F. Litch, Dental Brief.*

To Prevent Discoloration of Facings.—I have found that the tendency of porcelain facings to discolor when the backings are soldered to place may be prevented by painting the surface of the facing upon which the backing is placed with a thin solution of whiting in water, being careful, of course, not to use enough to interfere with a close adaptation of the backing. —*Dr. Tines, Register.*

Gain Access to Canals Before Filling.—As the perfect filling of canals is the ultimate object of all canal treatment, why not gain free access at any cost? In distal cavities, especially in molars, where lack of room is such a handicap, great satisfaction is gained by filling the distal cavity, and then opening into the pulp chamber from the morsal surface.—*Dr. F. W. Harnden, Gazette.*

Moldine, to Soften When Hardened.—Break into small pieces, place in an old glass, pour in considerable water, with half a teaspoonful of glycerine, and let stand in a warm place. The water dissolves the lumps and evaporates, leaving the glycerine thoroughly permeating and moldine. A little kneading or further evaporation finishes the task and makes the material as good as new.—*Dr. P. W. Smith, Era.*

Swage for Adapting Caps to End of Root.—Cut a disk from a rubber band (such as is used for holding books), about the size of the end of the root. Burr a hole through the disk to fit over the post, and with a bur in the engine bore a hole in the end of a piece of wood which is about the size of the end of the root. Place this over the post and use as a swage.—*Dr. J. Mills, Review.*

To Color Porcelain Bodies and Cement.—A very minute quantity of oxyphosphate of copper powder may be mixed with the body to obtain the deeper shades. It is equally efficient when added to the zinc phosphate cements and is needed to deepen the shade in many cases when setting inlays. Many otherwise perfect inlays are made conspicuous by cement too light in shade.—*Dr. J. W. Beach, Forum.*

To Make Worn Carborundum Wheels True.—Small carborundum wheels used with the dental engine very often wear "flat." They can be easily and quickly made round again by placing the mandrel, to which one is attached, in the hand-piece of the engine and holding it steadily, while the engine is running, against a large carborundum wheel mounted on the lathe and revolving rapidly in the opposite direction.—*Review.*

Bleaching Discolored Teeth.—The first procedure is the closing of the apical end of the root with oxychloride of zinc and cotton. Then oxalic acid is applied and hot air, after which dry chalk is packed into the canal and left over night, repeating if necessary. Finally pyrozone, twenty-five per cent, is applied until the color returns. The canals, etc., are then dried, the inner surface of the cavity covered with copal varnish, over which oxyphosphate is placed.—*Dr. Bogue, Summary.*

Shrinkage in Porcelain.—In porcelain inlay work, to overcome shrinkage of the first bake from the edges toward the center, make a small hole through the mass, just before baking, with a pin or needle. The mass will fuse in a ring shape. Have plenty of surplus in the matrix, whether of platinum or gold, and manage to get the corners of this surplus covered with the investing material. This prevents the matrix from changing shape.—*Dr. F. W. Harden, Gazette.*

Matrices.—When matrices are broken in adapting them to the cavity, I place the porcelain body in the matrix before I remove it from the tooth, press it into position, brush off the surplus particles around the edge of the matrix, remove, and without investing—whether a gold or platinum matrix—carefully place it in the furnace and bake it; by this means I avoid a misfit caused by any rent. I then refit to cavity, and finish the subsequent bakings.—*Dr. Geo. Evans, Cosmos.*

Method of Making Surface of Wax Smooth.—A smooth surface on a "waxed up case" can be obtained without spoiling festoons or gum carvings by adopting the following method: Smear the surface of the wax with a pellet of cotton saturated in chloroform. Burn off the chloroform with an alcohol lamp or a small bunsen flame. This will leave a smooth, glossy surface on the wax and will not destroy previously carved gums.—*Dr. H. H. Hancock, Dental Review.*

Suggestions for Using Diamond Drills.—A man who makes diamond drills says that when drilling a cavity with a diamond drill oil should be used as a lubricant, thus preventing the drill from becoming heated, which would cause it to tear out; also, when drilling a cavity two drills should be used of different sizes, the larger one to widen the cavity and the other for the retaining points. When properly used these two drills should last until the steel which holds the diamonds is actually worn away.—*Off. & Lab.*

Medicine Does Not Cure.—Not only do drugs used in pyorrhea pockets fail to cure the disease if the deposit is not removed, but they are unnecessary if it is removed. And not only are they unnecessary in that case, but they are a hindrance and delude, leading the operator, by the suspension of suppuration, to believe that the disease is cured, and leading him also into vague (though pleasurable) theories as to the constitutional origin or the disease and treatment in accordance therewith.—*Dr. H. N. Lancaster, Items.*

To Get Into a Root Canal.—*Dr. W. A. Bostwick*, of Rochester, N. Y., gets into roots difficult to enter on the first sitting by sealing next the tissue to be broken down a bit of cotton saturated with fifty per cent sulphuric acid. In the course of a day or two entrance to the canal is easily effected, especially when the way thereto has long been blocked by a mass of pulp stones. In many cases where this treatment has been resorted to, a jet of water alone washes away the secondary deposits as it would so many grains of sand.—*Off. & Lab.*

Congested Gums.—In the treatment of congested gums, whether involved in pyorrhea alveolaris or not, iodid of zinc in crystal form has often been recommended and applied with much success. It is one of the most effective agents to restore the gums to their normal form, but it occasionally seems to induce sensitiveness of the teeth, and the taste is objectionable to some patients. To overcome these limitations the crystals may be mixed with one of the essential oils to the consistency of a syrup. Applied in this form it is fully as effective and much more acceptable.—*Review.*

Backing Rubber Teeth.—The doctor uses No. 28 or No. 30 pure gold plate, which he cuts on the bias, using a piece a bit wider than the length of the tooth, and sufficiently long to encircle the tooth. A hole is then punched for one pin, the metal held in place by means of this and wrapped about the tooth; the surplus is then trimmed, leaving the labial or buccal surface exposed, as the case may. The hole is then punched for the second pin, and the metal carefully fitted to the tooth and burnished into place. For the molars and bicuspids, where a heavy backing is desired, the surplus gold at the cervical portion of the tooth may be turned back and used as a matrix to hold the extra solder.—*Dr. J. P. Parker, Gazette.*

Posterior Teeth.—In these cases, which are usually difficult of access, we must depend on chemical action to a certain degree before attempting to remove the broken drill by mechanical efforts. Here I would advise the following method: Saturate a pledget of non-absorbent cotton wool with a twenty-five per cent solution of pyrozone and introduce it into the canal, sealing the same with gutta-percha or sandarac varnish, and leave it in the mouth for at least three or four days. When the patient returns, remove the application, and the drill will be found to be completely rusted and loosened, so that a forcible injection of water from the bulb syringe will readily effect its dislodgement.—*Dr. S. J. Fernandez, Cosmos.*

Denuded Necks of Teeth.—If the patient is still young enough, say under forty, you can coax the gum to grow and recover the root in part, by great care and stimulating it gently with iodin and zinc oxid with ten per cent resorcin painted on it at intervals of one to two weeks. This is very tedious and requires much patience. The remedies must be alternated and changed about every six weeks. During the process of building gum-tissue the patient must use a badger brush and a dentifrice composed of one part white castile soap and nine parts precipitated chalk. I occasionally add twenty grains quillaia saponaria to a ten-ounce prescription.—*Dr. A. W. Harlan, Items of Interest.*

Advantage of Gutta-Percha as a Crown Setting Material.—If you get too much cement and it sets with your crown not in place, you have to let it go or practically destroy it in order to get it off. If you have it partly on with gutta-percha and it does not quite fit, pull it right off while it is still soft, then you have a perfect impression of the inside of the root and the border of it, and with a very little surplus taken away it can be reheated and put on the same way. In this way it is possible to set any bridge or crown that you may desire to set absolutely perfect. The term "absolutely perfect" is used in a reasonable sense, meaning that there is certainly no better method of approaching perfection.—*Dr. Brown, Cosmos.*

Gouty Pericementitis.—Gouty pericementitis is very properly divided into the acute and chronic forms, as we have two distinct types of development. In the middle cases of an acute pericementitis the patient complains of twinges of pain about the roots of the teeth, and along the course of the superior or inferior dental nerve, according to which jaw is affected, and the pain may even extend to other branches of the trifacial nerve. The suffering may be more or less severe while it lasts, is distinctly neuralgic in character, and after a period of variable duration disappears to return again whenever another period of imperfect elimination permits of the accumulation in the system of the nitrogenous waste products.—*A. B. Conklin, M. D., Register.*

Inlay Suggestions.—Before stripping the platinum from the inlay, try into the cavity to see if you have the contour perfect, also to judge of the occlusion as near as you can by observation. You cannot have the patient close upon the inlay, because previous to its being set it would be easy to fracture the porcelain. After the cement is completely crystallized a thin porcelain filling in the occlusal surfaces of molars will have the full strength of the whole tooth to resist masticating stress and is in no danger of fracture.

If the contour is lacking, build on more body; if too full, grind and change as desired, and return to the furnace to be glazed again.—*Dr. W. T. Reeves, International.*

FAILURES IN PORCELAIN FILLINGS.—The failures recorded against porcelain fillings may be summed up as follows: Displacement, breakage and loss through recurrent decay.

Displacement may be due to excessive stress brought upon the filling in mastication, to imperfect retention form of the cavity, to the use of an inferor quality of cement in setting, or to a combination of two or more of these causes mentioned.

Breakage is due to the application of undue stress or to insufficient bulk of material.

Loss through recurrent decay, while not of common occurrence, has usually been noticed in those cases where the cement is rapidly dissolved by the oral fluids.—*Dr. J. H. Prothers, N. W. Jour.*

MASSAGING IN PYORRHEA.—Massaging the gums often increases the capillary circulation, the lack of which is one of the principal causes of this disease. We often meet the disease advanced to the stage when the teeth have become loosened. I have found ligation in the not too far advanced stage, satisfactory in lessening the danger of increasing the surrounding inflammation, but when the gums have loosened to such an extent as to entirely fail to support the teeth I use a number of bands, either of gold or of other suitable metal, made to tightly fit the necks of the teeth well up towards the biting edge. After placing these bands in position I take an impression, removing bands in same, soldering bands together in relative positions and then replacing, with the use of cement if found necessary; then proceed with treatment.—*Dr. F. R. Mayer, Internat. Dental Journal.*

THE REMOVAL OF BROKEN DRILLS IN CANALS.—In anterior teeth and others easy of access, enlarge the canal and if possible try to loosen the broken drill, and with the water syringe inject a stream of water into the canal suddenly and with as much force as possible. If this plan fails, employ the following method: Enlarge the canal as in the first place, and try to loosen the broken drill as before. Now take a small piece of German silver (No. 32 standard gauge), bending it in tube form to the size of the broken shank. Now solder one end of the tube to the shank of the drill, as neatly as possible, so as to allow no overhanging of solder, which would impede its progress in the canal. A tube has now been formed that will, if accurately made, fit over the broken piece. I might mention that the addition of a little shellac varnish placed in the mouth of the tube will facilitate the operation considerably.—*Dr. S. J. Fernandez, Cosmos.*

PAINLESS EXCAVATION.—The smooth-running engine and handpiece (with emphasis on the handpiece), together with sharp burs (again, decided emphasis on sharp), guided by a delicate touch, is still the main reliance for painless excavation of carious matter. There are various medicaments of partial help, but not one that is always to be relied on. An investigation of the handpieces and burs used by the majority of operators convinces me that there lies the greater source of pain. A handpiece needs regular attention to keep it running true, and a bur needs the angle of the cutting blades to be very precise in order to prevent jar and heat of an unnecessary amount. A fair knowledge of the principles of mechanics will demonstrate to you in a few moments the two evils of untrue rotation and the wrong angle of cutting edge in tools. There is a chance in our calling for a very scientific and practical discovery along these lines by some ingenious and educated member.—*Dr. A. J. Flanagan, Alumni Annual.*

ANCHORAGE OF INLAYS INVOLVING INCISAL EDGES.—There are some cavities involving the incisal edge which I believe must have some retention in the way of pins. I do not think large fillings involvng the incisal edge will remain in for any length of time without them. I have adopted the following method: With a small bur I drill a pit in the cervical wall of the cavity parallel with the pulp, and then make another at a point near the cutting edge and parallel with it. Platinum wire No. 24 is given a right-angle bend and fitted to the two holes in such a manner as to leave a platinum loop slightly above the pulpal wall of the cavity. I then put cement into the pits and force this wire into it and bring the cement up under the loop so as not to have any undercuts. After that is finished I make the matrix and bake the inlay. I then use the carborundum stone to undercut the groove corresponding to the loop. I then remove the cement from beneath the loop and cement the inlay to place. The cement crystallizes around the loop and retains itself in the cavity of the porcelain inlay and cannot be pulled out.—*Dr. Hornberger, International.*

HAD NO MIDDLE EAR.—In his early practice Dr. D. B. St. John Roosa, the eminent New York specialist, one day received a letter from a man living in a remote part of Connecticut, says the Saturday Evening Post. The writer explained that he was afflicted with growing deafness, and that a summer visitor had suggested his consulting Dr. Roosa. After describing the symptoms the man ended by asking what was the probable nature of his trouble. Dr. Roosa advised the man to consult a local physician, and added: "From what you say I should presume that your difficulty arises from a deceased condition of the middle ear."

Two days later the doctor found this among his mail:

"DEAR SIR—Yours received and contents noted. What do you take me for—a ring-streaked willipus-wallipus? You talk about my middle ear; how many ears do you think I've got—three, or five? My ears may be pretty long, and I guess they are, or I wouldn't be writing to no New York doctor for advice, but I'd have you to understand that I've got just two of them, and no more, like other folks, so there ain't no middle one. Don't get fresh."

BOOK REVIEWS.

Anaesthesia in Dental Surgery, by Thos. D. Luke, M. B., F. R. C. S. E. 175 pages, with 28 illustrations. Rebman, Co., N. Y. Price $1,50. 1903.

In this little volume will be found a large amount of interesting and instructive data regarding the anesthetics and anesthetic combinations used in dental surgery.

The ten chapters take up the history of anaesthesia, nitrous oxide, gas and oxygen, gas and ether, ethyl chloride, and ether, anaesthetics in special cases, local anaesthesia, chloroform, accidents.

This little book should be in the hands of every dentist who even occasionally gives an anaesthetic.

An Atlas of Human Anatomy, for Students and Physicians by Carl Toldt, M. D., Professor of Anatomy in the University of Vienna, assisted by Professor Alois Dalla Rosa, M. D. Translated from the Third German Edition and adapted to English and American and International Terminology by M. Eden Paul, M. D. Brux., M. R. C. S., L. R. C. P. In six volumes covering the regions of the human body, osteology, arthrology, myology, splanchnology, angeiology, neurology, the organs of the senses. Price bound in cloth $18. Publishers: The Rebman Co. 10 W. 23rd St., New York City.

While a true knowledge of anatomy, a knowledge that will through life supply the needs of the physician and surgeon in their practical work, can be obtained only in the dissecting room, the student's labors with scalpel and forceps must be preceded and supplemented by systematic private study. And for this purpose, and in his revision of his anatomical knowledge subsequent to dissection, the student's time and energy will be enormously economized if he has at hand a graphic representation of every structure named and described in his systematic treatise.

Toldt's Anatomy is the first English work giving an accurate pictorial representation of *all* the data of human anatomy, carefully drawn to scale from actual specimens, and arranged suitably for systematic study.

It is hard for the reviewer to find words in which to adequately describe the work and its value in the study of anatomy, and in attempting to do so an outline will be given of the contents of the different volumes.

Volume one first outlines the regions of the human body, then takes up the structure of the bones, the axial skeleton, the skull and the bones of the skull, the skeleton of the upper and lower extremity.

Volume two is devoted to arthrology, including the articulations in general, the arteiulations of the trunk, the articulations and ligaments of the head, the articulations of the superior and inferior extremities.

Volume three covers the subject of mylogy—first, general considerations, then the muscles of the trunk, the muscles of the head and neck, the muscles of the upper extremity, the muscles of the lower extremity, and following this is a supplement on the inguinal canal and the femoral or crural canal.

Volume four treats the subject of splanchnology, covering first general considerations, the digestive organs, the respiratory organs, topographical anatomy of the thoracic and abdominal viscera, urinary organs, male reproductive organs, female reproductive organs, the muscles of the perineum and the topographical anatomy of the pelvic viscera.

Volume five is given over to angeiology, taking up first general considerations, the heart, the arteries of the trunk, the arteries of the head and neck, the arteries of the upper and lower extremities, the veins of the trunk, the veins of the head and neck, the veins of the upper and lower limbs, the lymphatic system.

Volume six is devoted to neurology and the organs of the senses, and includes general considerations, the central nervous system, the peripheral nervous system, the sympathetic nervous system, and in the section devoted to the organs of the senses, is considered the eye, the ear, the nose, the organ of touch, the skin.

The reviewer regrets that the language necessary to do justice to this work is not at his command. It contains altogether

1505 illustrations, many of them in colors. There is in the entire work some 1000 pages, the page being about 11x8½ in size. Each volume contains an index and a descriptive appendix.

It is printed on a heavy enameled paper and bound attractively in cloth. The work is a credit to everybody who had a part in its production.

A Text-book of Dental Pathology and Therapeutics for Students and Practitioners by Henry H. Burchard, M. D., D. D. S., revised by Otto E. Inglis, D. D. S., professor of dental pathology and therapeutics in the Philadelphia Dental College. Second Edition, Octavo, 650 pages with 450 engravings. Cloth $5.00, leather $6.00. Lea Bros. & Co., Philadelphia and New York. 1904.

Dr. Inglis in revising this work has borne in mind the original motive of the author, the production of a text-book which should serve as a useful basis of instruction upon a subject which students find difficult to comprehend from lectures alone.

While the original plan and arrangment of the chapters has been in the main adhered to, the text has been largely rewritten in order that new material might be inserted in its proper place and bearings.

The section of pharmacolgy has been omitted and in its stead the remedial agents referred to in the text have been completely indexed, so that their uses may be studied without difficulty. We cheerfully commend this book to our readers.

The Best American Orations of Today, compiled by Harriet Blackstone. 303 pages. Cloth $1.25, postpaid. Hinds, Noble & Eldredge, 31 W. 15th St., New York City.

This is an attractive little volume that it is a pleasure to look over. It contains orations by President Roosevelt, Senator Beveridge, John Hay, T. B. Reed, Senator Lodge, Grover Cleveland, and about thirty other equally famous men.

OFFER OF PRIZES BY THE NEW YORK INSTITUTE OF STOMATOLOGY.

With the desire of stimulating investigation in any field of activity directly relating to Dental or Oral Science, The New York Institute of Stomatology offers two prizes for the best papers submitted to it embodying the results of such original research.

The first prize for the best paper will be a gold medal and $250. The second prize for the next best paper, a gold medal and $100.

CONDITIONS.

a. The papers offered for competition must be typewritten i English.

b. Must contain not less than 1,500 nor more than 3,5 words.

c. Must be signed by a motto or *nom de plume.*

d. Must be accompanied by a sealed envelope marked wi the same motto or nom de plume on the outside, containing th true name as well as the motto of the contestant within.

e. Must be sent to the chairman of the Executive Committe Dr. F. Milton Smith, 38 West 36th St., on or before March 1 1906.

JUDGES.

The following gentlemen have consented to act as judges:

Dr. C. N. Johnson of Chicago, Editor of "Dental Review."

Dr. Eugene H. Smith of Boston, Dean of Harvard University Dental School.

Dr. Wilbur F. Litch of Philadelphia, Editor of "Den Brief."

Under the following

RULES.

1. The papers will be sent to the judges without the seale envelopes, containing the names of the contestants, which wi be retained by the Executive Committee till the decision of th judges is made.

2. In deciding on the merits of papers offered in competition the judges will be requested to take into consideration th value and character of the research work the results of whic are presented, more than the literary character of the essay but to give the latter due credit.

3. The judges are expressly authorized to decide which i any of the papers submitted to them are of sufficient merit t entitle them to the prizes offered, or to withhold the award fro all the papers if none are deemed worthy.

4. Authors of the prize papers will be invited to read their essays before a meeting of the Institute, as will the writers o other papers of especial merit, the Institute reserving the right to the first publication of all papers offered in competition.

Papers not used will be promptly returned to the writer Those read before the Institute will be as fully discussed as possible and when published will be adequately illustrated.

For further information address Dr. F. Milton Smith, 3 West 36th St., New York, N. Y.

PUBLISHERS NOTES.

The attention of the medical profession is being directed to the use of Sal Hepatica in typhoid fever and inflammatory conditions of the bowels. It appears to be a very safe saline laxative in such affections, being less obnoxious to the organisms than sodium phosphate alone or other salines and is more readily eliminated.

By commingling lithium and sodium phosphates in proper proportions with certain of the "Bitter Water" salts, the manufacturers of Sal Hepatica claim a compound is secured that is superlatively more active than either the lithium or sodium salt alone, or indeed, than any of the natural purgative mineral waters. Recognizing this, the most eminent practitioners latterly have taken to prescribing Sal Hepatica in preference to the natural waters, with the result that the remedial action of the latter is enhanced, the untoward manifestations accruing reduced to minimum and their palatability materially increased.

Sal Hepatica is very effective in limiting and reducing the amount of uric acid formed within the circulation and excreted by the kidneys, and is freely absorbed and taken into the blood and as rapidly (along with the chemical products formed) eliminated by the excretory ducts or organs as is readily demonstrated by its presence, after a brief course thereof, in perspiration and urine, the latter more particularly being doubled or trebled as to quantity and rendered decidedly alkaline.

Sal Hepatica is the original effervescent saline laxative, hepatic stimulant, uric acid solvent and eliminant or irritating toxins in the alimentary tract. It is manufactured under the direct supervision of J. Le Roy Webber, Ph. G., its originator, and only at the laboratories of Bristol-Myers Co., Manufacturing Chemists, 277–279 Green avenue, Borough of Brooklyn, New York city.

In treating hemorrhage after extraction, and especially in profuse hemorrhage, Phenol Sodique can be fully relied upon to answer every purpose and will in no case fail. The pain caused by extraction will also be removed.

Phenol Sodique prescribed as a daily mouth wash prevents fermentation of the food carbohydrates in the mouth and keeps the buccal cavity in a cleanly and aseptic condition. A prescription for Phenol Sodique given to your patients, with instructions to use same for some days before beginning your crown or bridge work, will put the mouth in a cleanly and healthy condition and greatly assist you in your work.

As a local application to the pus pockets in Pyorrhea, Phenol

Sodique gives most satisfactory returns. In treating this disease discourage the use of tooth powders, as they contain sugar, which will ferment in the mouth, and have your patients use instead Phenol Sodique, which not only cleanses the teeth but is also the most valuable treatment for this disease.

As some find the name hard to remember we would suggest writing to Messrs. Hance Bro. & White, Philadelphia, proprietors of Phenol Sodique, for a pad or prescription blank, and if the preparation is unknown to you or unused by you in your practice, we would suggest that you also request a sample.

After extraction, to prevent or stop a re-occuring hemorrhage, and to relieve the after pain, the patient should be given a prescription for Phenol Sodique and instructed to use same, slightly diluted, several times after leaving the office.

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WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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THE EDITOR'S REPORT ON THE SANITOL CHEMICAL LABORATORY COMPANY AFTER A PERSONAL INVESTIGATION.

In our issues of February, March, May and June various editorial reports and letters were published concerning the Sanitol Chemical Laboratory Company of St. Louis and its relations to the dental profession generally and to the dentists who were stockholders in particular.

From various sources, talks at dental conventions, and from letters received from dentists throughout the country, I was led to believe that the officers of the company, and particularly the president, were conducting its affairs dishonestly and for means of personal enrichment at the expense of the small stockholder.

Inspired by a desire to protect the individual dentists who were stockholders from the machinations and greed of a corporation that apparently was attempting to play "high finance" with the hard earned money of dentists, and to "bamboozle" stockholders out of their rights, I endeavored to lay before our readers the facts as they were presented to me, in order that justice might be done.

In February I published an editorial the statements in which were secured from the report of Dr. Philip Kelley, a dentist of Boston who had interested himself in the matter, together with my comments and the expressed invitation to all to use the columns of the JOURNAL for the shedding of light upon the entire subject.

In March a letter from the company's attorney and another from a gentleman proven to be connected with the company were published, the latter being a defense and the former a threat. At the same time, desiring to be perfectly fair, and realizing that there are two sides to every question, I asked the company a series of questions, the answers to which I agreed would be published in our next issue.

Not being favored with these answers in the May issue we published the complete report of Dr. Kelley on the company's affairs, and the evidence of jugglery and trickery on the part of the president and board of directors of the company appeared very conclusive.

At this time letters were sent to dentists known to be stockholders asking information in regard to their experience and as to what the company was doing. Some few of the replies were published in our June issue and we learned that the company had numerous agents on the road busily engaged in selling stock, and dentists were everywhere receiving letters and literature from the company asking them to subscribe for stock, and that statements were being issued stating what the company had accomplished in the past, what they expected to do in the future, and urging dentists to take stock and help the business by recommending the Sanitol products.

Feeling my responsibility in the matter and wishing to have some absolutely definite facts that I could vouch for, to lay before the stockholders, I determined to go to St. Louis, have an interview with President Luyties, see the Sanitol plant, and find out at first hand the exact truth of this entire Sanitol matter.

Mr. Luyties very willingly gave up a whole day to me and in the frankest possible manner gave me all the information desired. That interview and my investigation were complete and entirely satisfactory to me, and I wish to set forth below the results as found.

At the outset I wish to say that my examination completely exonerates President Luyties and the company's officials of any wrong doing, and that it is my conviction that the investment by dentists in the Sanitol Chemical Laboratory Company is perfectly safe and is full of promise.

In order that the matter may be understood it should be stated at this point that the principal charge, in fact the only charge made, was that when the company was organized and later when the capital stock was increased the board of directors purchased from the president of the company, Mr. H. C. G. Luyties, the trademark and formulae for different preparations such as the Sanitol tooth powder, tooth paste, brush, etc., paying an excessive price therefor, the company not getting sufficient return for the amount invested.

President Luyties is an expert chemist and in 1896, after considerable study and experimentation he evolved the formula of the Sanitol Liquid Antiseptic. So convinced was he of the merits of the preparation that he decided to place it on the market, and with two or three business friends he organized a stock company for that purpose. The capital stock of this company was $200,000 divided into 20,000 shares of $10.00 each and this was all subscribed by these gentlemen.

To put a preparation of this kind on the market involves endless work and demands the expenditure of a large sum for advertising, sampling, etc., and even with these, the sales increase at a very slow rate as a rule.

His friends gradually became discouraged and from time to time Mr. Luyties bought in their stock until he practically controlled the entire stock.

It was at this time that the co-operative plan occurred to him. This co-operation is the idea of selling a small number of shares of stock in the company to each dentist, the dentist after testing the preparation and finding it worthy of his support to prescribe it for his patients' use where such a preparation is indicated.

By this means the goods would gradually be introduced to the class of people who care for their teeth, and at the same time the constant call upon the druggist would force him to put it in stock if he had not already done so, and this would react upon the jobber and force him also to keep it in stock.

This plan seemed so good that it was decided to give it a trial and solicitors were placed on the road to sell stock in the company to dentists.

This stock was sold on the basis of 10 per cent in cash and the balance to be paid from the dividends as they were earned. That is if a dentist subscribed for 10 shares of stock he paid

$10.00 in cash and the $90.00 was paid up from the dividends as they were earned by the Sanitol Company.

And right here is the interesting point.

As Mr. Luyties had paid into the Company $200,000, and owned all the stock in the first place, the dentist was buying the stock from him and it would naturally be supposed that the money from the sale of stock would go to him.

But as a matter of fact the 10 per cent that the dentist paid in cash went to the agent who sold the stock for expenses, commission, etc. It was understood at that time that only stock held by dentists would receive any dividends earned by the Company.

As the original owner of this stock, Mr. Luyties should have received dividends, but as a matter of fact he did not get one cent.

When it is also understood that he had waived the payment of dividends, on the stock he still held, and that he was drawing no salary, it would seem that at this time the small stockholder had no reason to enter a kick.

President Luyties pinned his faith in the Sanitol formula and it was this formula and trademark name Sanitol, that was really the foundation of the company's business. The $200,000 cash invested by Mr. Luyties and his friends was used during the first years of the company's history for exploiting Sanitol Liquid.

The one preparation alone not being sufficiently productive it was decided also to take over the rights and formulae of other dental and toilet preparations, compounded and discovered by Mr. Luyties, these being the means of greatly increasing Sanitol sales. The stock issued to Mr. Luyties in payment for these was part of it sold in exactly the same way as the other, *Mr. Luyties not deriving one cent from its sale.* The balance of this stock he still holds, and I understand never will be sold by him as he takes too great a pride in the success of the Sanitol company.

To show Mr. Luyties absolute fairness to the small stockholders let me again state that for five years he waived the payment of all dividends on his holdings of stock, and that he drew no salary from the company until it was demonstrated that a successful and prosperous business would develop. In other words the president sacrificed his dividends, his time, and all emolument until the business grew safe and certain, and allowed the entire profit to be distributed to the small stockholders and to be used in developing the business in order that the dentist might get the largest possible benefit.

These facts I believe have not before been made public, at least they were unknown to me and they completely offset the various statements that the president was taking advantage of the small stockholders.

The president of the company is now drawing a salary of $500 per month, and in view of the fact that he devotes all of his time to the business, and considering the large interests involved, this compensation appears to me to be on a reasonable basis.

The fiscal year of the company begins December 1st and ends November 30th of each year. During the eight years the company has been organized, the dividends have been paid regularly to the small stockholders, and the amount never has been less than 9 per cent. During the fiscal year from December 1, 1903, to November 30th, 1904, dividends aggregating 9 per cent. were paid.

The company makes a financial statement each year. These statements are found in the records of the company and are open to the inspection of all interested parties.

The increase in the capital stock was made in the interests of the company and the results in the growth of the business amply justify it. The company's treasury stock is now being sold and the proceeds derived from its sale are being used partly to develop the business to an even greater extent, and the remainder is held as a surplus to carry out in the future the plans for further growth.

Of the treasury stock now being sold but little remains. The day I was in St. Louis but 6,300 shares remained and new applications were coming in daily.

The present plant of the company is very crowded and larger quarters are much needed. The directors have been unfortunate in not being able to secure a clear title to some desirable land, but today negotiations are pending for suitable property, which are expected to result satisfactorily.

In conclusion I wish to say emphatically that I am absolutely satisfied that President Luyties is honest and capable and that he is working for the best interest of the dentists who are stockholders. It is to his interest as well as that of the small stockholders that the company be a success from every standpoint, because his interests and that of all the other stockholders are identical. I believe that the dentists who have invested their money in Sanitol stock have made a wise investment and that they will profit by retaining their stock.

Next month I hope to give you a little sketch of Herman C. G. Luyties as he impressed me and why I believe stockholders can safely leave the active control of the business in his hands.

WILL THE DENTAL PROFESSION SUPPORT AN INDEPENDENT DENTAL JOURNAL?

There are at the present time in the United States but two dental magazines that are not absolutely controlled by dental manufacturers or dealers and THE AMERICAN JOURNAL OF DENTAL SCIENCE is one of these two.

The publishers of this journal are proud of the fact that it can be said that it is edited, owned, controlled and published by members of the dental profession, that it is absolutely devoid of commercialism and that it has no trade alliances of any kind whatever.

Those who have had any experience in this line realize that it is an extremely difficult task to build up an independent magazine, and by this we mean a large strong influential publication with a big subscription list.

One of the difficulties lies in the fact that the members of the profession need to be jarred into realizing the importance and value of such a magazine, and the necessity for their active support in sustaining and developing it, and another difficulty is found in the fact that the dental trade are more or less antagonistic, and very chary of advertising support.

Indeed, the American Dental Trade Association we are informed, have a rule to the effect that members of their associa-
on shall advertise only in dental magazines whose publishers
e members of their association.

As about eighty per cent of the dental manufacturers and dealers are members of this association, it is apparent that the field in which the independent journal can look for advertising is limited, and this is a serious handicap to its growth.

If the dental profession wants a strong independent dental press the individual members of the profession must give their support both by their subscriptions and by preparing papers for publication.

Money is needed constantly to pay the printer and in almost the same proportion good papers are needed for publication.

THE AMERICAN JOURNAL OF DENTAL SCIENCE can be made the best dental magazine published next year if it is given the active support of five thousand dentists. Will you be one of these?

In order that every one may give us the benefit of their subscription as inexpensively as possible to themselves we are quoting clubbing rates with a few dental and popular magazines.

Every dentist has one or more popular magazines on his reception room table and the Cosmopolitan Magazine is one of the best of popular periodicals for this purpose. We are making an offer of the Cosmopolitan Magazine and THE AMERICAN JOURNAL OF DENTAL SCIENCE for all of 1906 for $1.00. The Cosmopolitan sells for this price alone.

We make a number of other good clubbing offers in the advertising pages of this issue and it is our hope that you will help us by taking advantage of one of these.

WHAT SOME DENTISTS SAY IN REGARD TO INDEPENDENT DENTAL JOURNALISM.

Independent dental journalism is the subject of all others which is most important for dentists to consider at the present time. We cannot, in any true sense, claim to belong to a profession unless we are ready and able to assume the publication of the records of our work. I sincerely hope that you may be able, not only to keep alive, but to spread the spirit of independent journalism.—WM. H. POTTER, D. D. S., Boston, Mass.

Dentistry and not the dental commercial houses ought to produce and possess the literature of dentistry.—D. D. Smith, M. D., D. D. S., Philadelphia.

I am in sympathy with you in the movement for independent dental journalism.—S. W. Bowles, D. D. S., Washington. D. C.

I never had the pleasure of seeing a copy of your journal but believe we should own an independent dental journal, so I enclose $1.00 for my subscription.—Edward J. Rohrer, D. D. S., Nevada, Iowa.

Independent dental journalism is something the dental profession must have and I am glad to help in your effort, as I am that of the *International Dental Journal*. I trust that you may succeed both for your own sake and for that of the profession.—H. A. Kelley, D. M. D., Portland, Me.

I am heartily in sympathy and in accord with the movement of the profession giving their support to our independent dental journals.—Carroll H. Frink, D. D. S., Fernandino, Fla.

I sincerely hope that you will continue to spread the spirit of independent dental journalism. The dental profession ought to be able to support at least one independent magazine.—J. M. Rogers, D. D. S., Twin Falls, Idaho.

I am pleased to enclose $2.00, which will pay my subscription to The American Journal of Dental Science for two years from January 1st, 1905. I wish that every dentist in the U. S. would do as much or more for this splendid independent journal of ours.—A. W. Cate, D. D. S., Boise, Idaho.

I am in sympathy with the movement for independent dental journalism.—H. C. Kenyon, D. D. S., Cleveland, O.

I think your admirable little independent journal should be supported by the profession.—H. T. Stewart, D. D. S., Memphis, Tenn.

The American Journal of Dental Science is not controlled by dental trade interests. Support it.

Independent dental journalism is the urgent need of today in the dental profession. Your object in arousing the profession to the realization of this need is certainly commendable, and I wish you success in your efforts.—A. Irwin, D. D. S., Camden, N. J.

In renewing my subscription to The American Journal of Dental Science, I do so feeling that every dentist owes it to himself and the profession to support independent dental journalism.

I am pleased to see the gradual improvement in the Journal and hope it may have continued success.—Thos. H. Smith, D. D. S., Knoxville, Pa.

I feel that the subject of an independent dental journal, free from trade influences, is what is needed to advance dental interests to a high standard, and that we shall not accomplish much in this line until such a journal is obtained.—Waldo E. Boardman, D. M. D., Boston, Mass.

I most heartily approve of independent dental journalism and feel that the farther dentistry removes itself from all forms of commercialism the better it will be for the profession, and I shall always stand ready to do anything I can to be of service in this.—A. H. Merritt, D. D. S., N. Y.

I am glad to see that you are getting up such a clean, neat little journal. Keep the good work up.—J. A. Gorman, D. D. S., Asheville, N. C.

When I want a dental journal that gives me the greatest amount of benefit in the least possible time I look for The American Journal of Dental Science, which I eagerly read all through.—E. M. Kettig, M. D., D. D. S., Louisville, Ky.

The fact that dentistry requires an independent journal free from the influences of the manufacturer, is so apparent to all the profession, that it appears unnecessary to endorse the position assumed by the American Journal of Dental Science.

While the dental profession are thoroughly cognizant of the necessity for the existence of this independent journal, and while they wish for its growth and development, they have not yet awakened to the fact that only by steadfast and loyal support can they expect its continuance and improvement. With a journal voicing the needs of the profession, free and uncontrolled by the dealer, fearless in its utterances, whose purpose will be for the good of the dentist and for the exposure of quackery and cant, there will result a mutual growth and development along such lines as have heretofore been only dreamed of; but never realized by those who have pride in their calling. The trade journal has served a purpose in dentistry, and still does, and will be required as the exponent of new inventions and mechanical devices which are offered for sale but what the dentist now demands is literature, live and invigorating, pertaining to the pregnant questions of the day, viewing dentistry as a profession, edited by strictly professional men along strictly professional lines. Can this be accomplished? Let us hope it can and let us each lend his aid according to his ability, with the belief that success will surely attend our efforts, if out support is unanimous, and our desire sincere to see the wholesome, vigorous development of our profession.—WM. A. MONTELL, D. D. S., Baltimore, Md.

Believe me when I say that I find myself unable to contribute words strong enough to convey what I feel to be the importance of independent dental journalism.

In order to reach the highest standard of professional attainment, divorcement from commercialism is necessary. The dentist who has constantly before him the cost of every pellet of gold or piece of solder, is apt to stop short of proper contour in filling, crown or bridge.

The same is true of the "trade journal" who has always before his mind the trade interest, and the product of his particular house. They are apt to stop short of the *whole* truth, and lend encouragement to operators who patronize their supply houses.

This is good policy on the part of the supply house and the profession has no reasonable expectation beyond this line.

Therefore independent dental journalism is the proper channel through which we may attain to lofty ideals—pure ideals.

The fact that material and commercial products figure largely

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On another page we are making some good clubbing offers on dental and popular magazines.
Send us your subscriptions for 1906.

in our profession is a hindrance to advancement. Knowing that such must always be the case, we should strive to keep up the purest ideals of professional life with untrammeled thought and discussion before us first. Then through the supply house seek the help they offer for the maintenance of high attainment.—A. M. JACKSON, D. D. S., Macon, Ga.

PROFESSIONAL EMANCIPATION AND HOW IT MAY BE EFFECTED.

Abstract of a Paper by J. E. WEIRICK, D. D. S.

A striking manifestation of what we are coming to, or rather what we have come to under this system of commercial control, is to be found in our literature. Look the field over and with one exception you do not find a dental journal that is not controlled by a supply house. And brazenly controlled. No effort is made at concealment. There on the cover of each paper you will find calmly set out that it is published by this supply house or that. And the editors are among the best known men in the profession. *This is a condition that is not alone without parallel in the professions, but without parallel in trade.* I have mentioned this peculiarity to a number of friends who are engaged in trade journalism, and without exception they were filled with amazement. That we should have not one widely read, independent, influential paper of tone, dignity and national standing seemed to them an impossible situation. Yet, I confess, on me this anomalous condition had never made impress until I began to investigate it. And so, no doubt, it is with you. We have become so habituated to the existent condition that the possibility of anything better, or different has probably never suggested itself to us. All the other professions have a number of high-grade independent periodical publications to represent them. So far as I have been able to find out there is no trade so lowly that has not its independent mouthpiece. Only the dental profession must depend for its periodical literature on "house organs." Perhaps you do not know what a "house organ" is. It is a technical term applied in trade to publications issued in the interest of an individual firm or house, and such organs are looked upon with scorn by the members of the trade. They have neither weight or influence, but are frankly advertising devices. In the professions other than ours, such publications are entirely unknown, or if they exist they have no standing or recognition. Nothing better helps to explain our situation, the backwardness of our professional rank than the fact that practically all the publications devoted to our interests, to the promulgation of our science, are controlled by supply houses. The standing of a profession is determined by its literature. It was not until the English physicians were represented by the Lancet that they obtained recognition as a class. That the dentists of America, in spite of the manifest progress they have made, in spite of the really remarkable achievements that have been theirs, in spite of the fact that they number thirty-five thousand, have so little recognition today in the affairs of the American Medical Association is due no doubt in large measure to the fact that physicians have such standard publications as the *Medical Record, American Medicine*, the *Journal of the A. M. A.*, and half a dozen other periodicals to represent them, while we have nothing except house-organs that neither merit respect nor obtain it.

If we had a periodical literature of known independence, and high standing, a literature that would command general respect and intelligent attention, it would serve not only to stimulate the profession as a whole, but it would be certain to develop original research work, in which we are now woefully backward. No important research work has ever been accomplished in any division of science unless it has had the active good will and co-operation of a considerable body of men. And this can only be brought about by the existence of a medium that is in a position to encourage and promulgate results. No section of medicine stands in greater need of the work of the intelligent investigator than ours. We have many problems to solve. In a dozen different directions we are groping in the dark, proceeding along lines where all is speculation, nothing fact. We need instruction and information on a hundred different subjects. We need better mechanical appliances, and above all we need a broader spirit, a spirit that will keep men who perfect such processes and appliances from running straight to the patent office with

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them. Such a broader spirit can be fostered only through a broader literature.

There is, too, another side to this mercenary, patent-seeking spirit that the present conditions fostered. This is the way in which the supply combination adapts this professional narrowness to its own uses. Its agents in the field and its representatives in Washington watch narrowly for new devices, and anything that promises at all is bought up as soon as the patent rights are perfected, or even before. And then the new device is shelved in order that it may not interfere with the stock designs already on the market. No one knows even remotely how many hundred appliances that would make far better work and easier, have been shelved in this way, with a consequent arrest of development in the science, and a gradual lowering of the moral tone.

To overcome this hampering spirit in our ranks will require a strong propaganda, and for this there is only one agency on which we may with certainty rely. That is a sound, far-reaching literature that will preach higher professional standards and hold the fraternity up to them. Manifestly it is idle to look to the house organ for such work. It could not, even if its editors had the inclination, work against the interests of its owners, as it would have to, in order to do any good along these lines. For such work we must look to independent publications conducted in the interests of the workers in the profession, and not in the interest of any supply dealer or manufacturer, no matter how rich or how important.

DISCUSSION.

Dr. Geo. E. Hunt: Now, in regard to independent journals. There have been a number of independent journals started in the past few years. I don't believe any man ever started an independent dental journal in the world who was ever foolish enough to think he would make money out of it. The trouble is they cannot be made to pay expenses. The *Indiana Dental Journal* cost those who started it $1,000.00 the first two years and barely broke even the third year. I don't think the man that attempted this journal ever expected to make money out of it. This is an impossibility under existing conditions. But the discouraging thing about it is that they do no even get anything for their time and labor, but absolutely have to go down into their pockets and make up the losses, that is in paying printing bills, paper bills, etc. The profession, I admit, ought to have an independent journal that would rank with the *Journal of the A. M. A.*

Dr. J. E. Nyman: I feel that there are too many journals. If we could have just one journal, published every week, we could have all of the transactions of all of our societies in the country published and still have plenty of room for all kinds of articles, and would then have room for articles on research work. Then if our profession supported that publication and no other, we would soon have a stop put to the practice which is now so much in vogue, of every house or corporation that comes into existence starting up a dental publication immediately and hiring some man to run it. These dental journals which are put put out by these houses do not improve our standing, nor dignify the profession in the eyes of other professions or in the eyes of the people.—*The Dental Summary.*

HINTS ON DENTAL PRACTICE.

By Dr. L. K. Fullerton, Denver, Colo.

(Read before the Colorado State Dental Association, Colorado Springs, June, 1905.)

The profession of dentistry, a few years ago, was of low estate and looked upon almost as a vulgar occupation, by the masses, and was practiced by but few who were not ignorant of its principles and requirements, but it has been impregnated with learning, art, and genius; thus stimulated, it has become of good repute, and now holds a position which we trust it will maintain while man shall people Mother Earth, and neglect to look after that portion of his anatomy now confessed to be most necessary to his health, happiness and long life.

The evolution of dentistry from its despised condition may be likened to that of the common thistle, which when crossed with a brilliant hued plant, drops the thorns, discards its evil points, and gives us the beautiful coleus of today, the most luxuriant garden and lawn illuminator that Nature, aided by horticulture, has ever produced. Dentistry, as it was, the comman handicraft thistle of the past, with its many points of abhorrence, today engrafted with science, gives us the dental surgical art of which we are proud and of which the world shows its substantial admiration and appreciation.

We are not a part of anything, but something within ourselves. There is too much in dentistry for even a superior genius to master. The labor is more than body and brain can stand. The tide is flowing the other way. We have specialties in dentistry; dental surgery, operative dentistry, prosthodontia, orthodontia. Though fond of cutting, yet we are being carved up into many sub-divisions to satisfy the demands of the hungry public. The day of the closed door to the laboratory is a recollection of the past.

The profssional man, dental practitioner, or he who has no higher regard for his ability, than to place his earning capacity at merely so much an hour or a day, having no regard for the responsibility he takes or the position his calling occupies, properly belongs to the tin-pail brigade, and should be placed at the rear of a $1.10 per day pay-roll, with the section hand on a narrow-gauge railroad. The dentist today who tells you that he will place a first-class gold cap for $5.00, and that the man who is charging you more is a robber, is either a natural born, or an educated liar, or else has no knowledge of his profession.

The cost of materials seldom, if ever, should be taken into consideration for the compensation you are to receive for professional services. The benefit you have done your patient may be taken as a basis for your charge, after you have considered the financial condition of the patient, remembering ever that the poor and needy are entitled to aid and relief.

The professional man of today is the one to educate the public to appreciate his services, and thereby receive proper compensation. If competent dentists would live up to our code of ethics, lay aside the momentary greed for the almighty dollar, and treat their professional brothers as fathers do sons, or in other words, abide by the Golden Rule, we would all be working together toward that end. It is, nevertheless, most unfortunate alike for the general public and the members of our profession that the highest code of ethics is only too often more honored in the breach than in the observance. For paltry momentary profit, justice and fair dealing are forgotten, and our noble profession reduced to the level of a commercial trade no higher than that of a mechanic.

I am of the belief that the present conditions are partially brought about by the fact that the majority of the practitioners of today are not educated men, and have no higher regard for the position they occupy and the services rendered that the common working man. Take the graduates from our dental schools for the last year and see how many have previously received a diploma from any other institution of learning. In speaking with some friends on the subject, the other day, one remarked, "Yes, he was a policeman two years ago," another, "Yes, he was a barber," and so on. The successful dentist of the future must be an educated and polished gentleman, in addition to being a master of his profession.

From the progress we have made in the last few years, we cannot in our profession dream or surmise, much less predict the future. The Archimedean lever, that will elevate effort and ability, is the reduction of the amount of work we do, and the increase of the fees. With the dental ascendency that America possesses today, what must be the result in a few generations, on a people educated to treasure their teeth as pearls of priceless value? Without preservtion, a people cannot be truly healthy and happy, and, consequently, great. The ideal dentistry will only be universally practiced, when the public demands it, and this condition can alone be brought about by the united effort of the profession to properly educate the public. Then let us one and all make it our consistent effort to advance both ourselves and our most honorable profession.—*Items of Interest.*

TREATMENT OF PUTRESCENT TEETH AND A PERMANENT ROOT-FILLING.

By Dr. N. N. Wycoff, Trinidad, Colo.

(Read before the Colorado State Dental Association, Colorado Springs, June, 1905.)

In no other branch of dentistry are the conditions so varied or the treatment so diversified as in connection with pulpless teeth. While we may be entirely familiar with the physical and pathological characteristics of the tissues a correct prognosis is sometimes difficult.

In studying my subject I deem it necessary to consider pulpless teeth under two classes, viz.:

Class I. Those which have died through mechanical causes and thermal changes.

Class II. Those dying from infection through decay subjecting the canal contents to inflammation, suppuration and death. With both classes the most important factor is the use of every antiseptic precaution, as we will invariably have a septic condition present at the apex of the root, with a necrotic or pericemental trouble ensuing, if careless.

With Class I; death by mechanical changes; apply the rubber dam before an opening is secured into the canal, so that all danger from further infection by means of the numerous species of bacteria present in the oral secretions may be obviated. Wash out with peroxide of hydrogen and warm water, dry with alcohol, disturbing the inner contents of the canal as little as possible, until sterilized.

For anterior teeth I use oil of eucalyptus; posterior teeth, beechwood creosote, on a small wisp of cotton, sealed in the canal loosely with cement. After three or four days reopen with rubber dam applied, wash out with alcohol, and with a broach remove all the contents of the canals thoroughly, then dress with iodine and creosote, or eucalyptus for four or five days, when root canal can be safely and permanently sealed.

Where death has resulted from infection by decay, and inflammation of the peridental membrane is involved:

First, where there is a blind abscess, drain tooth with peroxide of hydrogen and warm water, open as thoroughly as possible, then apply the rubber dam, dry with alcohol, insert a loosely placed cotton dressing with Black's 1-2-3, not closing the foramen, seal with temporary stopping, perforate and paint the gums with equal parts of iodine and aconite, avoiding all unnecessary pressure during the treatment. After three or four days if inflammation has not subsided and pus is still present, repeat the treatment.

Should there be no pus nor inflammation present, treat as above described for Class I, when there is not the complication of a blind abscess.

If the abscess has a fistulous opening, wash it thoroughly with peroxide of hydrogen and warm water, forcing the same through the fistulous opening. Then fill the cavity with gutta percha, puncture the filling and insert the nozzle of a hypodermic syringe partly filled with creosote or eucalyptus, forcing the medicine through until it appears at the opening in the gums; then dismiss the patient, leaving the cavity open, and repeat the operation in three or four days. After this treatment the same methods can be applied as above described where no complications previously existed.

Now we are ready for a filling which should possess the properties of being germ-proof, antiseptic, non-irritant, and permanently seal the apical foramen. This last property (permanently sealing the apical foramen) I believe to be the key to success or failure.

The various root-fillings tolerated by the profession are usually not used, but abused, and in most cases canals are imperfectly sterilized and recurrent sepsis is brought about by disregard of this principle.

After experimenting with chloro-percha, iodoform, zinc oxide, creosote and several other combinations of various materials for over a year and many times only partly filling a canal, no matter how determined I was in the accomplishment of the same, I became interested in several articles on tannic acid, iodine and cotton and decided to try the same, after convincing myself that the properties which a permanent root-filling should possess was embodied in the above.

First—Tannic acid is an astringent and styptic which tans into leather any organic tissue that may still remain in a canal and renders the same inert.

Second—Iodine is antiseptic and disinfectant.

Third—Cotton is the only germ-proof material known, as evidenced by the use made of it by the bacteriologists.

Fourth—The iodine and tannic acid have a chemical action upon the cellulose in the cotton forming a new compound as well as throwing down metallic iodine. This can easily be proven by taking a pellet of cotton, dipping in iodine, then tannic acid, pressing out the surplus liquid and allowed to dry in the sun.

A thread of cotton is wrapped around a smooth broach, dipped into tincture of iodine, then into finely powdered tannic acid, then forced to the apical end of the canals. Dry the canal so

Independent dental journals are not published to make money—but to benefit the dental profession.
They merit your support.

that all excess of iodine is removed (and there should be very little); wipe out canal with alcohol and then fill with whatever material suits the operation. I generally use medicated gutta-percha covered over with cement.

Discoloration of tooth will result only from carelessness in method of operation. Sepsis will not recur, as you have a material which becomes as hard as cement, sealing the apical foramen perfectly, non-irritant, antiseptic and germ-proof.—*Items of Interest.*

ITEMS.

In soldering often the solder will not flow just when you wish it to go. Take an inch or two of the carbon from a pencil and fasten with binding wire to an old excavator and use to direct the solder when in a molten state.

There is often a difficulty in finding the right spots to drill through the backing when a broken facing is to be replaced upon a bridge. Flow a little wax upon the backing, place facing in proper place, press pins through the wax and then drill with proper bur.

To prevent shrinkage in large inlay fillings break up a porcelain tooth and place small particles in small plantinum impression, flowing new porcelain mixture over them, thus reducing amount of porcelain to shrink.

Remember always that the "highest art is art concealed," hence do not allow gold to show in the teeth if you can possibly avoid it. Only ignorant patients tolerate it and when they learn better you will be discarded if you have made such a display.

Some of the manufactured porcelain teeth will not stand a high fusing furnace, hence when using crowns, unless you have the right make, all color will be burned out.

In making a Richmond crown the color is seldom the same after soldering, hence it is best to use the furnace and back them with porcelain instead of gold.—*E. P. Beadles, D. D. S., Hints.*

Look over the clubbing offers on dental and popular magazines, to be found in the advertising section.

SUGGESTIONS.

Did you ever spray ethyl chloride on the gums around the root of a tooth that you were preparing for a crown? Try it and your patient will repay you for your trouble.

A good separating medium is made by dissolving paraffine in gasoline. Put in all that the gasoline will take up. To use, spread solution over impression lightly with a camels hair brush.

Filling Root Canals.—The filling of root canals where semi-liquid praparations are used can be more easily and successfully accomplished by rotating the smooth broach in the canal, instead of pushing it. Repeat until the canal is pretty thoroughly filled, then with direct pressure complete operation. —*Dr. A. P. Burkhart, Forum.*

Setting Inlays.—To prevent moisture reaching the inlay after seating it in place, cover with the surplus cement and firmly press a piece of tin foil over the whole. This will adhere for hours and is of course absolutely impervious to moisture.—*Dr. C. B. Bohland, Review.*

BOOK REVIEWS.

Handbook of Anatomy. Being a Complete Compend of Anatomy, Including the Anatomy of the Viscera and Numerous Tables, by James K. Young, M. D., Professor of Orthopædic Surgery, Philadelphia Polyclinic; Clinical Professor of Orthopædic Surgery, Woman's Medical College of Pennsylvania; Instructor in Orthopædic Surgery, University of Pennsylvania; Fellow of the College of Physicians of Philadelphia; Fellow of the Philadelphia Academy of Surgery; Fellow of the American Orthopædic Association; Member of the American Medical Association, etc. Second edition, revised and enlarged. With 171 engravings, some in colors. Crown Octavo, 404 Pages, Extra Flexible Cloth, rounded corners, $1.50 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

While Gray's Anatomy, or some other large work on the sub- is a necessity to every medical student and practitioner, yet on account of the voluminousness of the large work, something smaller is almost as essential for quick reference. Such a work is Young's Anatomy as it gives enough to be a good working guide but is condensed so that accurate information may be quickly obtained. The book is a deservedly popular one and this new edition will find many purchasers. The author states that Gray and Morris have been frequently consulted so that the book can be used with either. The practitioner will find especially satisfactory the sections on the viscera, special senses, vascular system, the nervous system and surgical anatomy. Special attention has been given to the anatomy of the brain and nervous system, which will compare favorably with the descriptions in larger works. The many illustrations in the valume are excellent and add greatly to its value.

The Self-Cure of Consumption without Medicines Showing the Twentieth Century Methods of Combating this Disease; with a chapter of Prevention of Consumption and other Diseases. By Chas. H. Stanley Davis, M. D., Ph. D., Member of the Connecticut State Medical Society, Etc., Etc. E. B. Treat & Co., 241 W. 23d St., N. Y., Publishers. Price, cloth $.75.

Consumption is the most wide spread of all diseases, as shown by the statistics of the various state boards of health. In the United States there are more than 1,250,000 cases of consumption, with more than 150,000 deaths from the disease every year. One of the noteworthy advances for which the twentieth century promises to be distinguished, is the practical suppression of this disease.

There is not a shadow of doubt but that consumption can be practically stamped out as has been typhus fever, Asiatic cholera, etc. The civilized world is being aroused to the necessity of increased and well directed action against the continued spread of this insidious disease, as well as towards its cure.

The object of this book is to show how, from its first beginnings to its last stages, before actual decay of the lungs takes place it can be cured in at least 95 per cent of the cases and this without the use of medicine.

It is a book that anybody can read with profit.

The Cosmopolitan Magazine and The American Journal of Dental Science for all of 1906 for one dollar.

The American Journal of Dental Science will be larger, brighter and better in every way next year. Subscribe now.

The Sexual Instinct—Its Use and Dangers as Affecting Heredity and Morals. By James F. Scott, M. D., Late Obstetrican to Columbia Hospital for Women, Etc., Etc., 436 Pages. Cloth. Prices $2.00 net. E. B. Treat & Co., 241 W. 23d St., N. Y.

In his preface to this work the author states: "This book contains much plain talking for which I offer no defense. Its justification will be found in the body of the work.

"The design of the work is to furnish the non-professional man with a sufficiently thorough knowledge of matters pertaining to the sexual sphere, knowledge that he cannot afford to be without.

"The future prospects of humanity of course rest in the sexual domain of those who are now living, and none will dispute that the degradation of mankind is due more to sexual irregularity than to any other cause.

"It is commonly said that it is a hopeless task to turn the stream of the sexual activities into orderly channels. Evils, however, can be mitigated, if not cured, if we subject them to a philosophical analysis, which may suggest remedies."

The author treats his subject in a clear, plain way, which does not give offense, and anybody can read it with profit.

Electricity and the Methods of its Employment in Removing Superfluous Hair and Other Facial Blemishes. By P. S. Hayes, A. M., M. D. Late Professor of Chemistry and Toxicology, Woman's Medical College, Professor of Analytical Chemistry, Chicago College of Pharmacy, Etc., Etc. Chicago: McIntosh Battery & Optical Company, Publishers, 1905.

The employment of electrolysis for the removal of superfluous hair has stood the test of not less than thirteen years, and the verdict appears to be that it has come to stay.

During he ten years the author has been using this method he has met with cases of all grades of difficulty, and he has had the advantage of this experience in describing the various modifications of the operation to meet the numerous difficulties to be overcome.

There is an exceptionally good chapter on the histology of the in and hair.

or those who are interested in this line of owrk or who con-
late taking it up the book will be found of great value.

The Skin—Its Care and Treatment. By Emily Lloyd. Second Edition Re-Written and Greatly Enlarged. McIntosh Battery & Optical Co., Chicago, 1905.

Until a few years ago there existed the general impression that a poor complexion could not be improved, while a good one needed nothing to preserve its beauty. The first wrinkle was greeted as a natural consequence, even though it came at twenty-five in one woman, ten years later in another, and perhaps during school days in another. Crow's feet were expected, and came obligingly, quite prepared to remain. The yellow tinge so disastrous to the blonde, was immediately labeled liver trouble, and all of these defects were allowed to become chronic afflictions instead of being merely temporary blemishes.

This little work, however, tells how all these troubles can be relieved, or obviated entirely and it is certainly a very interesting study.

The Diagnosis From the Eye—By Dr. H. E. Lane, belongs to that class of books which emanate from physicions who, dissatisfied with the lack of omnipotence in the most prevalent medical school of the past and present, scold it as allopathy and its practitioners as murderers, liars, deceivers, etc., and see in themselves the true world-reformers, who in alliance with Nature (every letter in capitals) will save the race if it will listen to them.

Of course they are antivaccinationists, antivivisectionists, and anti-everything. Yet were we to turn our backs upon them, we would be wrong, for there never was nor is any proposed system or method in any department of human imperfect life that does not contain grains of precious golden truths, and we cannot afford to neglect any truths, come they from friend or foe, from the culture or the crude, with or without a "c."

We are pleased therefore to acknowledge the value of the book to the discriminating physician.

The book is published by the Kosmos Publishing Co., Chicago.

Materia Medica and Pharmacy—Exercises in these Branches for Students, by P. A. Fish, D. Sc., D. V. M., Second Edition, Revised and Enlarged. Published by the author at Ithaca, N. Y., 1904. Price in cloth $1.50.

The book is for the laboratory and to be used under the guidance of a teacher, and is we confidently think intended to be eminently profitable for both teacher and pupil. The author states that the aim of the work is to emphasize the fact that first hand knowledge is best; to train the power of observation, and cultivate skill and accuracy. Because he has seen and done the work, the student will hold the facts thus obtained much longer than when taken on the mere statement of text books.

We congratulate Prof. Fish on his work.

Practical Dietetics—With reference to Diet in Disease—By Alida Frances Pattee, Graduate, Boston Normal School of Household Arts, Special Lecturer at Bellevue, Mount Sinai, and the Hahnemann Training Schools for Nurses, New York City. Third Edition, Revised and Enlarged. Published by the Author, at 52 W. 39th St., New York City. Price, cloth, $1.00.

This is a practical and comprehensive book on diet. It is not enough for the physician to know that this, that or the other article of food or beverage is good for the one or the other patient or canvalescent, because their physiological or pathological condition is met by the chemistry of the special ailment prescribed, but it is often necessary that he should know how a dish is prepared in the kitchen and how it is to be served toothsomely and appetizingly. And it is for the last named qualities that the author, herself an educated practicing nurse and teacher of nurses, deserves thanks for the service she has done for physicians nurses and their patients.

The great popularity of the work is attested by the fact that while the second edition appeared in October, 1904, a third was necessary in February, 1905.

Physician versus Bacteriologist by Prof. Dr. O. Rosenbach of Berlin, Authorized Translation from the German by Dr. Achilles Rose.—Publishers, Funk & Wagnalls Co., N. Y. and London, 1904. Price, Cloth, $1.50 net.

This book is an important contribution to Bacteriology. Rosenbach is by no means an antibacteriologist in any sense, least of all of the kind who cling fanatically to their convenient narrow horizon.

He is a scientific physician of acknowledged reliability and the halt which he calls to the extravagant panmicrobism which threatens to defeat its own usefulness will be effective.

This book should be in the hands of every physician.

you favor an Independent dental press? Support The American
al of Dental Science.

Handbook of Anatomy—Being a Complete Compend of Anatomy, Including the Anatomy of the Viscera and Numerous Tables, by James K. Young, M. D., Professor of Orthopædic Surgery, Philadelphia Polyclinic; Clinical Professor of Orthopædic Surgery, Woman's Medical College of Pennsylvania; Instructor in Orthopædic Surgery, University of Pennsylvania; Fellow of the College of Physicians of Philadelphia; Fellow of the Philadelphia Academy of Surgery; Fellow of the American Orthopædic Association; Member of the American Medical Association, etc. Second edition, revised and enlarged. With 171 engravings, some in colors. Crown Octavo, 404 Pages, Extra Flexible Cloth, rounded corners, $1.50 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

The object of this book, as indicated by its title is to furnish a concise though complete synopsis of human anatomy for the use of students of medicine and others. The author from a long teaching experience realized the limited time at the disposal of students and the unlimited amount of medical material to be digested, has endeavored by well selected wood cuts, typographical arrangement, and numerous tables to facilitate the acquisition of a subject as difficult as it is essential, and elegance of diction has been sacrificed to conciseness and accuracy.

Special attention has been given to the anatomy of the brain and nervous system which will be found to compare favorably with the descriptions in larger works. Dental students will find the work a practical aid in the study of anatomy.

First Annual Clinic of the Fraternal Dental Society of St. Louis, November 20, 21, 1905, *at the Barnes Dental College.*

Special features of the meetings will be a series of lectures on "Cavity Preparation," "Methods and Principles of Packing Gold" and "Methods and Principles of Finishing Fillings," by Dr. E. K. Wedelstaedt of St. Paul, Dr. A. C. Searl, Owatoma, Minnesota, J. F. Wallace, Canton, Missouri, and numerous other members of the Black and Wedelstaedt clubs and other prominent men in Operative and Prosthetic Dentistry will give clinics. Complete program will be announced later.

All ethical practitioners are invited to be present and clinic.

Every dentist should be a subscriber to our independent dental journals. The American Journal of Dental Science is independent.

Please send your name and subject of clinic to the secretary. Exhibit space to be obtained by application to the secretary. A cordial invitation is extended to the profession to be present and make this meeting limited in scope but limitless in importance, the best ever held in this section.

BURTON LEE THORPE, Pres.

S. H. VOYLES, Sec.
No. 3201 Washington Ave.

The American Journal of Dental Science has no dental trade connections. It is independent.

"LAUGH AND GROW FAT."

Life is such a serious business with the average mortal that on opportunity for a hearty laugh is more than welcome to most people. "A merry heart doeth good like a medicine," and so do the humorous features of that great metropolitan daily, The Chicago Record-Herald. The first thing that greets you on the first page of every issue is the humorous cartoon by Ralph Wilder, the well-known artist, that frequently tells more at a glance than could be conceived in a column of reading matter. Every issue contains also a humorous small story on the editorial page, and the "Alternating Currents" column, written by S. E. Kiser, one of the most popular humorous writers in the country. In addition to all these, the Sunday issue always includes a comic section, guaranteed to produce laughter.

The American Journal of Dental Science is not controlled by dental trade interests. Support it.

FAIR PLAY.

A group of drummers were trading yarns on the subject of hospitality, when one, a little Virginian with humorous eye and a delightful drawl, took up his parable thus.

"I was down in Louisiana last month travelin' 'cross country with S. J. Carey (the same being Stonewall Jackson C. at your service) when we kinder got lost in a mighty lonesome sort of road just about dark. We rode along a right good piece after sundown, and when we saw a light ahead, I tell you it looked st-rate. We drove up to the light, findin' 'twas a house, and when I hollered like a lost calf the man came out and we asked him to take us in for the night. He looked at us mighty hard, then said, 'Wall, I reckon I kin stand it if you kin.' So we unhitched, went in, and found 'twas only a two-room shanty and just swarmin' with children. He had six, from four to eleven years old, and as there didn't seem to be but one bed, me an' Stony was wonderin' what in thunder would become of us.

"They gave us supper, good hog and hominy, the best they had, and then the old woman put the two youngest kids to bed. They went straight to sleep. Then she took those out, laid them over in the corner, put the next two to bed, and so on. After all the children were asleep on the floor, the old folks went in the other room and told us we could go to bed if we wanted to, and, bein' powerful tired out, we did.

"Well, sir, the next morning when we woke up we were lying over in the corner with the kids, and the old man and old woman had the bed!"—*September Lippincott's.*

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"It didn't hurt a bit!"

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Another Chat

(Mr. Dentist) About "Ads"

You Know

there's many a man walking the street, who is losing his teeth faster than he is aware of. He seldom thinks of his teeth—when he *does*, he tries to excuse himself from having them cared for. You can't stop him on the street, but

An Ad Will Arrest

his thinker and bring him to you. Better write for such ads. Let's get acquainted. Put your name on a postal.

H. Elfers, DENTAL AD WRITER.

200 E. Prospect St., Cleveland, O.

THE AMERICAN
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EDITOR:
WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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A PERSONAL SKETCH OF HERMAN C. G. LUYTIES.

President of the Sanitol Chemical Laboratory Company.

An account of my investigation of the Sanitol Chemical Laboratory Co., was given the readers of the JOURNAL in the last issue. The personality of the president of the company will be of interest to every dentist in America.

Mr. Herman C. G. Luyties is a self made man in the American sense of that much used term. He started at the bottom rung of the business ladder and by hard work, perseverance and natural shrewdness has secured for himself an enviable reputation in the St. Louis business world.

Mr. Luyties is a business philanthropist. That is, he has developed business along practical lines and endowed it with a philanthropic spirit.

It has taken Mr. Luyties to view in a broad minded way, the dental manufacturing business as it is conducted today and transform it into a co-operative enterprise, whereby the greatest good resulting therefrom, is shared by the dentists of America, a well as by the manufacturer. The noble impulses which would prompt such an undertaking sprung from a disinterested mind. It is the dentists' welfare that Mr.

Luyties has at heart and his life ambition is to see the great undertaking which he has helped to start, grow to be a large success.

To sketch briefly, Mr. Luyties' business career has developed during the last decade. He is still a young man, about thirty-five, whose father, back in the fifties founded the great Homoeopathic Pharmacy Co. that bears the Luyties' name.

After completing a course in pharmacy at the St. Louis College of Pharmacy, he began his first business training by traveling for his father's concern throughout the United States and it was during these years that he gained his knowledge of men, his ability of salesmanship and his wide acquaintance with the dental profession and drug trade of the United States, that has made him invaluable as the head of the present corporation.

Mr. Luyties saw that the dentist as a rule, did not have the time or the experience necessary to properly look after his investments and that often he was at the mercy of preying sharpers who separated him from his money as invested in get-rich-quick concerns.

But it is the motives behind Sanitol that we as dentists are interested in, and when one considers that the object is to really emancipate the dentist away from poor investments. allowing him to participate in a business that vitally concerns his profession, one can begin to understand why the spirit of co-operation, the motive in this case is such a force.

Then too, Mr. Luyties has a most comprehensive plan of aiding the dentist in educating the public in regard to the care of the teeth. Up to today the big general public take but little interest in their teeth and the proper methods of preserving them, and the dentist single handed can accomplish very little in an educational way among the great mass of the people.

An association of dentists, however, working unitedly together can accomplish this much to the desired end, and it is just this work that Mr. Luyties is trying to carry out over the whole United States, through a corporation of dentists.

The tendencies in business today are to form combinations of capital, concentrating responsibility and eliminating the small man. The only protection against this is by co-operation of interests. Through union of the individual dentists, results can be obtained for each, that could not be obtained if sought for singly. Through a co-operative association the enormous profits that are gained by tooth preparation houses on the sale of their products are distributed among the individuals who really make the business.

The foresight of Mr. Luyties saw all this and the Sanitol Chemical Laboratory Co.'s business is really a practical working out of this broad minded idea. Dentists in the past have worked hard for what they got and at the end of life, it was the rule that they had nothing to show for it. A co-operative distribution of benefits, changes all this and each individual dentist becomes a live factor in dentistry.

Today Mr. Luyties naturally takes the greatest pride in the successful growth of Sanitol. As I have said before, his interest in the success of Sanitol's business is identical with that of every shareholder, since both realize equally from any profits derived from the business.

Mr. Luyties seeks more the honor and prestige from the business he has had a hand in developing than any personal enrichment, and it is a great source of personal gratification to him to know that the majority of the stockholders in the Sanitol Company appreciate highly his efforts in making the stock a valuable asset.

In personal appearance Mr. Luyties is about six feet tall and of sturdy build. In conversation he has a rapid flow of language, which oftentimes makes it difficult to follow him. He is keen, alert; acts very rapidly and has a masterly way of getting at the kernel of a business proposition quicker than any man I have ever had any dealings with. He has a way of getting into the hearts of people who are associated with him in business, which is unusual.

His family stands very high in the opinion of St. Louisians and the Luyties' name has been associated very prominently with the city's interests for years.

As a man of affairs his name appears as an officer in several well-known companies. In the present campaign going on in St. Louis, for the future growth of the city to a million population, an interview with Mr. Luyties for suggestions as to how best to attain that object, was widely published in the newspapers.

Socially the Luyties' name stands well in the city's register and Mr. Luyties is a member of most of the leading St. Louis clubs He is known everywhere for his keen love for good horses and for his enthusiasm in automobiling..

The best test of a man is the opinion held of him in his own home. The fact that Mr. Luyties stands so well at home and is looked up to by solid St. Louis business interests, was one of many reasons why I was so satisfactorily convinced that his management of the Sanitol Company was beyond question correct in every way.

The fact that he has held for years high positions, with which he has been honored, speaks well for the faith that is had in him personally and in business.

Mr. Luyties probably has a wider personal acquaintance with the dentists of the country than any individual outside of the profession. Dr. George A. Bowman, a dentist known everywhere among the profession, is his closest personal friend and adviser in all that pertains to dental interests in the company.

I have no doubt that the Sanitol Chemical Laboratory Co., under the direction of Mr. Luyties will grow to be the largest dentifrice house in the country, for the productions which they manufacture are of a superior quality, and the business management, as conducted by Mr. Luyties and his associates, is from every point of view sound, business-like and progressive.

The readers of this article and dentists who are associated in Sanitol, need have no fear or doubt as to the safety of their investment, as long as Mr. Luyties remains as its president and controlling factor.

CLUBBING OFFERS FOR 1906.

For a number of years we have made clubbing offers on dental magazines and we are again doing so for next year.

We have revised our usual plan however and for 1906 we are taking subscriptions only to The Dental Summary, The Dental Digest, Items of Interest and Dental Hints, in connection with THE AMERICAN JOURNAL OF DENTAL SCIENCE.

We are also making clubbing offers for next year on several popular magazines in connection with the JOURNAL.

The Cosmopolitan magazine has been a leading popular magazine for eighteen years. With the recent change in ownership it has been much improved and it aims to be the best in its field. It contains regularly the best fiction, the best special articles on timely topics and the best illustrations that money can buy.

Its subscription price is one dollar per year, BUT WE ARE OFFERING TO SEND YOU BOTH THE COSMOPOLITAN AND THE AMERICAN JOURNAL OF DENTAL SCIENCE FOR ALL OF 1906 FOR ONE DOLLAR.

We are also making clubbing offers on THE REVIEW OF REVIEWS and LIPPINCOTT'S MONTHLY MAGAZINE.

All of these clubbing offers are to be found in the advertising section of this issue and we hope that you will look them over and let THE AMERICAN JOURNAL OF DENTAL SCIENCE have the benefit of your subscription business.

A FEW MORE ENDORSEMENTS OF INDEPENDENT DENTAL JOURNALISM.

Without disparaging the dental journals published by those engaged in manufacturing and selling dental instruments and supplies, experience has demonstrated that there is need of professional journals free from commercial control. There is need of a medium through which the profession can speak freely its pro's and con's on all matters of interest, without thought whether they do or do not conflict with the interests of those controlling its pages. It is contended for the dental trade journals, that there is an absolute disassociation of the editorial and publishing interests—the text and the advertising pages; that the interests of the profession are solely in charge of the editor, untrammelled by the interests of the publisher. Without disputing this, there still remains a barrier, inseparable from trade journalism, to the full and free discussion of some topics over which the publishers have no control. For instance, a writer will hesitate from motives of delicacy, to criticise products in a journal published by those engaged in producing them, and may also hesitate to suggest their use lest his motives may be misconstrued.

A journal whose one object is to serve as a mouthpiece of the profession, and whose publishers are concerned only in making it serviceable to the profession and thereby merit its contributions and subscriptions, is free from all this. Moreover, if as well conducted, it occupies a higher plane, has a wider scope, and will prove more instructive to its readers. With it, the profession is first. The trade journal reduced to its lowest level is a mere trade catalogue with a little professional matter injected to save it from prompt destruction, just as other trade catalogues have added to them a few pages of valuable receipts, or useful information, as an incentive to their preservation. To their credit be it said, many of the dental trade journals have reached a very high level; nevertheless, there is still room on top for a well conducted independent dental journal.—Wm. H. Trueman, D. D. S., Philadelphia.

The dental magazines published by the various supply houses have in the past filled a large field both with their literature and advertisements and it is to be hoped that they will continue and receive the support they merit, but the commercial spirit is strong and prone to run a dental magazine into a trade journal. Conditions change with the advancement of our profession and the time is ripe for independent journalism for which there will be an ever increasing demand and necessity. An independent dental journal, carefully edited so as to command national and international confidence and support will have a tendency to improve every dental magazine published for competition along these lines must be met as well as in the commercial world.—D. J. Wait, D. D. S., Helena, Mont.

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nt dental journals are not published to make money—but
e dental profession.
t your support.

An independent journal—free from the influence of the manufacturer and supply house—free to publish whatever of good may appear in paper or discussion in any dental convention—free to publish articles containing the best thought of the profession—free to speak in words of praise or condemnation as the case may be of any instrument, appliance or method, without fear of the accusation of being influenced by any one. This should be the Mecca toward which the thoughtful, progressive dentist looks. Too long have we been handicapped in this particular. Too long have we been looked down upon, and secretly sneered at, by these very dental dealers, who essay to furnish us our literature and to direct our efforts. The dental profession should rally to the aid of independent dental journalism, and make it pre-eminently the literature of the profession, by the profession, for the profession.—A. T. White, D. D. S., Newcastle, Ind.

I feel that the subject of an independent dental journal, free from trade influences, is what is needed to advance dental interests to a high standard, and that we shall not accomplish much in this line until such a journal is obtained.—Waldo E. Boardman, D. M. D., Boston.

I am heartily in sympathy with independent dental journalism and wish you success in your efforts for same.—Geo. W. Warren, A. M., D. D. S., Philadelphia.

In renewing my subscription to The American Journal of Dental Science I do so feeling that every dentist owes it to himself and his profession to support independent dental journalism. I am pleased to note the gradual improvement in the Journal and hope it may have continued success.—T. H. Smith, D. D. S., Knoxville, Pa.

Independent dental journalism is the subject of all others that is most important for dentists to consider at the present time. We cannot, in any true sense, claim to belong to a profession unless we are ready and able to assume the publication of the records of our work.—Wm. H. Potter, D. M. D., Boston, Mass.

On another page we are making some good clubbing offers on dental and popular magazines.

Send us your subscriptions for 1906.

The dental journals which are put out by these houses (the dental supply houses) do not improve our standing, nor dignify the profession in the eyes of other professions, or in the eyes of the people.—J. E. Nyman, D. D. S., Chicago.

Independent dental journalism is the urgent need of today in the dental profession. Your object in arousing the profession to the realization of this need is certainly commendable and I wish you success in your efforts.—A. Irwin, D. D. S., Camden, N. J.

When I want a dental journal that gives me the greatest amount of benefit in the least possible time I look for The American Journal of Dental Science, which I eagerly read all through.—E. M. Kettigo, M. D., D. D. S., Louisville, Ky.

I never had the pleasure of seeing a copy of your Journal, but believe we should own an independent dental magazine, so enclose one dollar for my subscription.—E. J. Rohrer, D. D. S., Nevada, Iowa.

I am in sympathy with you in the movement for independent dental journalism.—S. W. Bowles, D. D. S., Washington, D. C.

I sincerely hope that you will continue to spread the spirit of independent dental journalism. The profession ought to be able to support at least one independent dental journal.—J. M. Rogers, D. D. S., Twin Falls, Idaho.

I am pleased to enclose $2.00 which pays my subscription to the Journal for two years. I wish that every dentist in the U. S. would do as much or more for this splendid independent journal of ours.—A. W. Cate, D. D. S., Boise, Idaho.

I am glad to see that you are getting up such a clean, neat little journal. Keep the good work up.—J. A. Gorman, D. D. S., Asheville, N. C.

I think your admirable and independent little journal should be supported by the profession.—H. T. Stewart, D. D. S., Memphis, Tenn.

I am very much in favor of independent dental journalism.—R. H. HOFHEINZ, D. D. S., Rochester, N. Y.

The fact that dentistry requires an independent journal free from the influences of the manufacturer, is so apparent to all the profession, that it appears unnecessary to endorse the position assumed by THE AMERICAN JOURNAL OF DENTAL SCIENCE. While the dental profession are thoroughly cognizant of the necessity for the existence of this independent journal, and while they wish for its growth and development, they have not yet awakened to the fact that only by steadfast and loyal support can they expect its continuance and improvement. With a journal voicing the needs of the profession, free and uncontrolled by the dealer, fearless in its utterances, whose purpose will be for the good of the dentist and for the exposure of quackery and cant, there will result a mutual growth and development along such lines as have heretofore been only dreamed of; but never realized by those who have pride in their calling. The trade journal has served a purpose in dentistry, and still does, and will be required as the exponent of new inventions and mechanical devices which are offered for sale but what the dentist now demands is literature, live and invigorating, pertaining to the pregnant questions of the day, viewing dentistry as a profession, edited by strictly professional men along strictly professional lines. Can this be accomplished? Let us hope it can and let us each lend his aid according to his ability, with the belief that success will surely attend our efforts, if our support is unanimous, and our desire sincere to see the wholesome, vigorous development of our profession.—WM. A. MONTELL, D. D. S., Baltimore, Md.

I most heartily approve of independent dental journalism and feel that the farther dentistry removes itself from all forms of commercialism the better it will be for the profession, and I shall always stand ready to do anything I can to be of service in this.—A. H. MERRITT, D. D. S., N. Y.

I am heartily in sympathy and in accord with the movement of the profession giving their support to our independent dental journals.—CARROLL H. FRINK, D. D. S., Fernandino, Fla.

Do you favor an independent dental press? Support The American Journal of Dental Science.

DENTAL MEDICINE.

By J. P. Buckley, Ph. G., D. D. S., Chicago.

(Delivered before the Illinois State Dental Society, 1905.)

I desire to call your attention to a few practical prescriptions, and in doing so it is my intention to emphasize the pharmacy involved in the combination of these various drugs, as well as to describe their dental and therapeutical application.

℞	Menthol,	gr xx
	Chloroformi,	f ʒ j
	Etheris,	f ℥ ss

M. Sig: Use as directed.

The first prescription is one that you can use for obtunding sensitive dentine. It will not completely de-sensitize all dentine, but in large cavities where there is an extensive area involved, and where the dentine is extremely sensitive, you can take a little pellet of cotton and place it, saturated with this liquid, in the cavity, after the rubber dam is adjusted, and you will find by the time you are ready to excavate the dentine that these two extremely volatile liquids, ether and chloroform, have volatilized. The value of this remedy depends largely upon the volatilization of these fluids. No solid can turn to a liquid, and no liquid to a gas unless it does it according to a certain law in physics by extracting a certain amount of heat. As these two liquids are volatilized there is abstracted from the tooth structures a certain amount of heat, and that volatilization drives the menthol into the decayed dentine. You can not remove the decay painlessly in all instances, but you will be surprised to find at times how painlessly you can remove it after you use this remedy.

℞	Acidi arseniosi,	ʒ j
	Cocainae hydrochloratis,	gr xx
	Menthol,	gr v
	Lanolini,	q.s. to make a stiff paste.

M. Sig: Use the desired quantity.

e American Journal of Dental Science is not controlled by dental interests. Support it.

While I do not use pressure anæsthesia for the purpose of painlessly excavating the cavity, I do use it for extirpating the pulp tissue. In certain cases, however, it is necessary to use arsenic. I believe arsenic has served us too well and too long to throw it aside.

In this prescription you will find arsenious oxide as the base; cocaine hydrochlorate—a local anæsthetic that is put in the prescription for the purpose of controlling the irritating action of the arsenic. Menthol is also added, and these three powders, made into a paste by using lanolin. The action of the remedy will depend largely on the way it is put up. If the druggist understands his business he will know that menthol is a highly deliquescent substance, and since the water in the lanolin is sufficient to liquefy the menthol, it takes very little lanolin to make a nice paste out of arsenious oxide and cocaine hydrochlorate.

I believe that we have the treatment of putrescent pulps and blind abscesses put upon a rational basis. In order to have you understand this thoroughly I must digress just enough to call your attention briefly to the chemistry involved in the decomposition of pulp tissue. Pulp tissue is supposed to be composed of proteids, carbo-hydrates and fats.

This is the point I want to make, in the treatment of putrescent pulps we have to take into consideration the presence of fatty compounds, because chemists have proved conclusively that in the decomposition of this albuminous material fat is one of the end products.

℞ Formalini,
Creasoti, a a f ʒ j
Alcoholis, m xx
M. Sig: Use as indicated.

Now you can get excellent results in treating putrescent pulps if you will use the first formula under this heading: Formalin and creasote, equal parts, to which alcohol is added.

Alcohol is only added for the purpose of making clear the solution, and all that is necessary is to take enough alcohol to clear up the solution. I find that for a drachm, approximately, of the formalin and creasote 10 minims of alcohol will be sufficient.

℞ Formalini,
Tricresol, a a f ʒ j
M. Sig: Use as indicated.

The second formula for the treatment of putrescent pulps is formalin and tri-cresol. I believe that we are indebted to Dr. MaWhinney for suggesting the use of tri-cresol to the profession, —either Dr. MaWhinney or Dr. Cook. Tri-cresol you can get absolutely colorless, but it is hard to get. Most of the specimens are colored. It is like carbolic acid, inasmuch as exposure to the air and light for any length of time will cause it to become colored. If you take tri-cresol and formalin in equal parts you will have a better remedy for treating putrescent pulps than creasote and formalin for three reasons: First, tri-cresol and formalin are miscible in all proportions. You will think at first that they are not going to mix, but by simply shaking the test tube they make a clear solution. Without the addition of any alcohol these two drugs will mix in all proportions. That is one reason that I prefer tri-cresol to creasote in the treatment of these cases. The second reason is that tri-cresol is a much better disinfectant than the creasote. It is three times as good a disinfectant as carbolic acid. In the past drugs have been selected and used in the treatment of putrescent pulps only because of their ability to inhibit the growth of micro-organisms, or to kill germs. There are many other things, such as irritating gases and poisonous ptomaines that are formed in the root canal, and it is as necessary to dispose of these substances chemically as it is to kill the germs. This remedy will kill the germs, and also dispose to advantage of the byproducts of the decomposition. The third reason, and the most important one for selecting tri-cresol insteal of creasote, is because I believe this agent acts chemically upon the fats. If you can select a remedy which can be hermetically sealed within the tooth, you are all the more happy for several reasons. Hermetically sealing a remedy keeps the saliva from contaminating the medicine and prevents the medicine from contaminating the saliva of the patient's mouth. We have still another advantage, as by so doing we prevent the tooth from changing color, provided, of course, we have the tooth to treat before it has become discolored. It is the formalin that gives us the advantage of hermetically sealing this remedy, because, from this mixture is generated formaldehyde gas, and the two main gases that are formed from putrescent pulps are ammonia and hydrogen sulphide. If gas accumulates pressure would be produced, and this would force some of the poisonous ptomaines through the apices of the roots. These ptomaines have been proved capable

Read our clubbing offers on dental and popular magazines on another page.

of setting up inflammation and suppuration. If you use this remedy, which generates formaldehyde gas we know why we can hermetically seal the cavity. The two gases, formaldehyde and ammonia, come in contact with each other and there is formed urotropin, which is used in medicine to disinfect the urinary tract. We don't care so much about that as we do the fact that we can have this gas from our remedy come in contact with the gas within the teeth, and we can change it into a *solid.* Then the same gas, formaldehyde, will come in contact with one of the other gases, hydrogen sulphide, and it will convert it into wood alcohol and sulphur. If you can convert the two main gases, NH_3 and H_2S, found in a putrescent canal, into *solids and liquids,* you can hermetically seal the tooth and have your patient go home happy.

The tri-cresol acts to advantage upon the fats. It is my belief that lysol, or something resembling it, is produced by chemical action of tri-cresol upon the fatty compounds. This belief has been brought about because of the fact that lysol is practically a solution of cresols in fats. There are three cresols, ortho, meta and para, and a mixture of these three cresols is what is known as tri-cresol, now recognized by the U. S. P. of 1900 as *cresol.* This is what I have used in combination with formalin to get this so-called rational treatment for putrescent pulps. The value of formaldehyde here depends upon the power the gas has of uniting chemically with mephitic gases. When you haven't these gases present to any extent formaldehyde is contraindicated in this strength solution. I know this remedy is being used everywhere. It should not be. If you have the teeth treated, and have disposed of these gases that come from a putrescent pulp, then this remedy has no business there. In that case you can use your tri-cresol alone, or you can use most anything after you have disposed chemically of the gases. Dentists should not expect to find one drug, or one remedy which can be used in every case all through their practice. This remedy has been used where it is contra-indicated. It is indicated only where you have these gases to contend with.

℞ Formalini, f ʒ j
Tricresol, f ʒ ij
M. Sig: Use where indicated.

Look over the clubbing offers on dental and popular magazines, to be found in the advertising section.

If you have not much of these gases you can modify the formula, and the modified formula would be two parts of the tri-cresol and one part of formalin.

℞ Thymol,	gr ij
Menthol,	gr iij
Eucalyptol,	f ʒ j

M. Sig: Use as directed.

Now, after you get these abscesses treated, or after you have removed the pulp by pressure anæsthesia, or by the use of arsenic, it is necessary to fill the canal. In performing this operation a good many of us believe that gutta percha has served us too long and too well to be discarded. Those of you who think that there is virtue in gutta percha as a root canal filling, and who are in the habit of using eucalyptol can get better results if you will use this formula. Eucalyptol is used because it is a slight solvent for gutta percha. There is a difference between eucalyptol and oil of eucalyptus. If you use the latter, you will have a beautiful case of pericementitis every time. Oil of eucalyptus contains three constituents, one of which is eucalyptol, which distils over first because it is the most volatile of the three. Eucalyptol, while it is not as irritating as the oil of eucalyptus, still it is irritating. By adding thymol, which is a disinfectant, and menthol, a local anæsthetic, you can modify the irritating properties of eucalyptol, as well as enhance its disinfectant power.

℞ Tincturae aconiti (rad),	f ℥ j
Chloroformi,	f ʒ iv
Menthol,	gr xx

M. Sig: Use in cases of pericementitis and facial neuralgia.

Sometimes in using the eucalyptol preparation, if you should use a little too much or don't use care and judgment you may have a case of pericementitis to treat. In that case, instead of using equal parts of tincture of aconite, tincture of iodine and chloroform, you get excellent results by using this prescription.

℞ Europhen,	
Orthoform,	aa ʒ j
Petrolati liquidi	q.s. to make thin paste.

M. Sig: Apply to abraded surfaces.

The American Journal of Dental Science has no dental trade connections. It is independent.

Here is a prescription that Dr. MaWhinney, with the exception of the vehicle, suggested to the Illinois State Dental Society two years ago. Equal parts of orthoform and europhen. The doctor suggested mixing these drugs together, and as they are both insoluble in water they can be packed down into a socket from which a tooth has recently been extracted. Wherever you have an abraded surface it will stop pain like magic. You do not need to write this presription. You can take these two powders and mix them with oil, all three of which are insoluble in water. Wherever you have an exposed surface dry it, put this oleaginous mixture on it and then the water from the saliva will be thrown back because water and oil are physically incompatible.

A RESUME OF THE NERVE CANAL SUBJECT.

By Dr. E. H. Ginnelley.

(Read before the Mercer Dental Society, Trenton, N. J.)

The subject of treatment of devitalized teeth and the filling of root canals and the various methods employed, while not new, yet is of the most vital importance to every conscientious practitioner. It is not my purpose to review the many methods employed in the treatment of teeth; neither shall I exhaust your patience by presenting the chemical and theoretical merits and demerits of the various antiseptics, escharotics, germicides, essential oils, etc., but I shall confine myself to the methods used in the saving of 235 devitalized teeth during the past year, not one of which, to my knowledge, has resulted in failure in any respect. For the purpose of more clearly explaining my methods in treating the various conditions, I shall divide them into three classes.

First.—The destruction of the pulp by either arsenic or injection. A case presenting with exposed or inflamed pulp, use the ordinary method of relieving the pain and reducing the inflammation. Two days later, if posterior teeth, apply arsenical preparation, hermetically sealing same, leaving it four or five days, when, upon removing, make good-sized opening into pulp chamber, dismiss patient, and in about one week adjust rubber

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dam, remove pulp, and if the slightest pain is felt, flood the canal with carbolic acid, working broach and acid up gradually to apex of root; above all, do not be afraid to reach the end, for just herein lies your success or failure, and a Fellowship or Danaldson broach, size marked "Fine," will not pass through an apical foramen five times out of a hundred, and soon one becomes accustomed to the touch and can readily determine when the extreme end has been reached. After completely removing pulp, with an old broach wrapped with bibulous paper, thoroughly dry root, after which use a hot-air syringe, drying tooth until patient feels the root is warm. In filling root, use Harvard cement, mixed very thin but thoroughly mixed with a large drop of oil of cinnamon first incorporated with the acid before the addition of powder; now use small, smooth, steel broach, and thoroughly pump cement to end of root, after which insert gutta-percha root canal point, and push it to the end; heat ball-shaped instrument hot, and cut off surplus length of gutta-percha point; add powder to remaining cement, or mix more quite stiff and fill part or more of crown, as desired, but as this keeps the thin cement in root forced to place, do not fail to fill at least bulbous portion of tooth.

Occasionally, we find roots of molars, the canals of which are too small for the ready introduction of gutta-percha points; in those cases I use a small, Swiss, untempered broach, in place of the gutta-percha point, first introducing broach to end of root, making a length about half-way with length of crown of tooth; partly withdraw, cut off with crown shears, and then with heavy pair foil carriers or a blunt instrument return broach to apex.

In preparing a root to receive a Logan crown, I proceed in the same manner as above described for removing the pulp and drying the canal; then with a smooth, steel broach with blunt end, heat the point, and with a small section of a gutta-percha point fasten to end of broach, soften over flame of alcohol lamp, dip in eucalyptol and carefully introduce into canal and force to apex, thoroughly condensing and closing foramen; then remove rubber dam and proceed with the crowning. By this method I have entirely eliminated any after trouble, such as swollen face, or even soreness.

In the second class of cases are included teeth whose pulps have died from natural causes and through decomposition have become putrescent, and from the slightest causes may develop a blind abscess with all its attending tortures. In treating where

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there is no apparent inflammation, adjust the rubber dam, flood the canal with dioxygen, carefully loosening contents of canal with broach, and with Asepto syringe continually wash contents out until apex of root is reached; then dry out canal, and with cotton-covered broach pump in root, Thayer's No. 4 in anterior teeth, and if posterior, oil of cinnamon or Thayer's No. 4. In the anterior teeth, where the canals are large enough and easily accessible, fill canal with cotton to apex, but not tightly; dry coronal portion of tooth and seal tightly with temporary stopping. If after a week there is no trouble, proceed to fill.

Should the case presented be one wherein the inflammatory action has already attained a state of acute abscess, then open and cleanse thoroughly the canals to the apex; apply aconite and iodine to the gum, and where the pain is severe inject a few minims of a ten per cent solution of cocaine in gum over apex of root; dismiss patient and have him return in a day or two, or as soon as inflammation has subsided, and then thoroughly syringe out canal with dioxygen every two or three days for a few times, when the tooth should be treated as in case where no abscess exists, except that for the first treatment I do not seal the medicament in, but use a pellet of cotton thoroughly saturated with vaseline; then, after two or three days, treat again as in case of no abscess. I have always considered the acute abscess the most serious and the least understood. Almost every writer on the subject admonishes the operator to use the utmost precaution against forcing septic matter through the foramen, which precaution is thoroughly justifiable, yet when we treat a case that has never and is not now giving trouble, how many times have each of us had the patient return in six to twelve hours after the treatment was made with the undisguised active symptoms of acute abscess? I believe firmly that the septic matter, in the majority of those cases, had previously invaded the apical space, and had become a regular habitue of the peridental membrane, dwelling there in apparent harmony with the surroundings, until captured by imprisonment and subjected to solitary confinement, when they soon assert their presence and demand release.

The third class of cases are much more easily managed. In treatment of chronic alveolar abscess with fistula, after adjusting dam the contents of the root canals should be thoroughly removed, and with a strong hypodermic syringe place a ball of vulcanized rubber over syringe point large enough to fill cavity of tooth or root; then force dioxygen through root and out at fistulous opening, thoroughly cleansing tract. Now, with a broach wound with cotton sufficiently large to fill the canal, flood same with Thayer's No. 4 or carbolic acid, and pump it through fistulous opening, taking the precaution to place a large piece of bibulous paper folded several thicknesses and saturated with vaseline over fistulous opening, that the medicament used may not injure the surrounding tissues. In ninety-nine cases out of a hundred, this will be all the treatment required, and the tooth may be immediately filled, but the writer prefers to leave treatment in tooth as in case of no abscess, sealing tightly, and in one week if fistulous opening is thoroughly healed then fill.

In some cases the apical foramen is closed, so that nothing can be forced through. I then treat as in case of no abscess, and take a broach, wind piece of bibulous paper around it, dip in Thayer's No. 4 or carbolic acid and insert it into fistulous opening; follow tract through alveolus to point of root and thoroughly swab out tract. Cover opening with cotton and vaseline for a day or two, and in about five days, if healed, fill tooth.

In case of fistulous opening that persists in not healing, I take asepto syringe, and with piece of soft rubber over point, insert point deeply in fistulous tract, and inject gently with Thayer's or carbolic acid, holding rubber tightly with pliers over opening, and withdrawing piston of syringe before removing it. By so doing there will be no escape of medicament upon the gums or cheek. I have employed this method in place of extraction and replantation where the ends of the roots have become calcified or necrosed through persistent alveolar abscess, and in all cases that do not readily respond to ordinary treatment.

In conclusion, I desire to say that I have followed the above treatment and filling for the past ten years, with some modifications, which has tended toward perfection. It will be noticed that I never use any instrument in a root canal but broaches, as I have never found any necessity for enlargement. I claim that in absolutely every tooth, except occasionally a third molar, I can reach the apex of the root with a broach, and can fill it with the same instrument. I do not include in the above statement teeth wherein the canals are entirely obliterated through age or abnormal conditions.

But to be successful, one must enlarge the pulp cavity and cut away sufficient tooth structure to obtain direct accessibility

Look over the clubbing offers on dental and popular magazines, to be found in the advertising section.

to canals, exclude saliva, and fill to apex of roots, as I am thoroughly convinced that success almost entirely depends, not so much on what medicaments are employed or how, as upon their intelligent application at the proper time and thorough, successful manipulation. *Items.*

ARTICULATION.

By Dr. G. M. Williams, Maysville, Ky.

With the impression and model right, we have only one thing to do for a perfect set of teeth, and that is articulation. We have our models before us on the bench, and wish now to place them in the articulator, occupying the same position as the maxillæ and mandible do in the mouth.

Take No. 12 brass wire and bend it in keeping with the outlines of the ridge of your lower model; start your bend in the center of the wire on the lingual side of ridge back to the ends of the ridge, pass over ridge at this point and continue your bend down the buccal side to center of model; treat the other side similarly. Turn your free ends outward and twist together and you have made a bite plate.

Take this bite plate and place a lump of wax on each side and press down on your lower model; remove, cool and trim till neat. Now place same amount of wax on the upper side of your trial bite, and place in the mouth and have your patient give you a bite of the upper jaw in the last placed wax. Remove and place your models in the impressions in your trial plate; secure plate and models together with a drop of wax at a few points and set properly in your articulator. You have now the models occupying the same position in the articulator as the jaws do in the mouth. Now make your trial plates while the models are in the articulator, and try in the mouth and see if they come flat together all the way around, to your great satisfaction. Trim or add wax to your models at this stage for proper fullness and proper closure of the jaws; but add no wax for opening or closing of the bite, unless your trial plates are on the models in the articulator. You have now

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your trial plates fitted to the proper fullness, length of the bite and ready to return to the models on the articulator. If you placed your lower model into the articulator in its proper position let it remain. Set your trial plates on this model and secure with a drop of wax. Remove your upper from the articulator and place to position in the upper trial plate. Now secure the upper bow of articulator to model and you have the same position in articulator that the jaws occupy in the mouth. with this proviso: if the mandibles are in an area of an equilateral triangle whose base is four inches, and you set your model in the articulator beyond or inside of this triangle, you may not expect the models in your articulator to occupying the same position that the jaws do to the mouth.

The wire bite plate can be made of an old lower impression cup by cutting off the rims. It is much neater than biscuit bite and more correct. Do not embarrass your patient about the proper closure of the mouth. If your bite plates are made neat, you get this closure in your manipulation for proper fullness and length of bite.—*Items.*

DON'TS IN GOLD FILLING.

By R. G. McLaughlin, D. D. S., Toronto, Can.

(Read before the Toronto Dental Society.)

Don't attempt a gold filling where you haven't access to every part of cavity.

Don't use a plugger point that gives anything but a direct blow.

Don't attempt a gold filling in a tooth that is void of proper support, natural or artificial.

Don't forget the burnisher plays an important part in finishing a gold filling.

Don't endanger cutting edge of incisor for sake of anchorage, rather groove toward pulp chamber.

Don't get it into your head that a porcelain inlay is a good substitute in the majority of cases for a gold filling—it is not.

our clubbing offers on dental and popular magaines on an-
'age.

DON'TS ON EXTRACTION.

By T. Henderson, D. D. S., Toronto.

(Read before the Toronto Dental Society.)

Don't fail to have your instruments thoroughly sterilized before extracting. Better boil them.

Don't have to look for your instruments under an anesthetic when you want to use them.

Don't have your patient in a recumbent position under nitrous oxide gas when extracting.

Don't extract lower teeth first if you have upper teeth to take out at the same time.

Don't proceed to extract if you let a root or tooth drop in the mouth until it is removed.

Don't be afraid to go up into the process at once for roots under an anesthetic, and lose no time.

DON'TS IN CEMENT FILLING.

By Dr. W. B. Amey.

(Read before the Toronto Dental Society.)

Don't use cement for filling without the rubber dam.
Don't remove overhanging enamel.
Don't allow any moisture in cavity on slab or scapula.
Don't use excess of liquid or powder.
Don't be careless about shade.
Don't remove dam until cement is hard.

DONT'S IN AMALGAM FILLING.

By J. Z. Rhind, D. D. S., Toronto, Can.

(Read before the Toronto Dental Society.)

Amalgam is a filling material which we all use every day, and doubtless the "Don'ts" which I shall give are observed by you all, but it is well to remind ourselves of them occasionally,

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as I have set down a few of those which we should constantly bear in mind.

Don't try to insert an amalgam filling in an approximal cavity without using a matrix fitting closely at gingival margin, for in order to have a properly contoured filling we must have a four-walled cavity also; if no matrix is used some of the filling material will be crowded over gingival margin of cavity.

Don't let your filling get wet while inserting, for the moisture in the filling will prevent finishing accurately to your intended outline.

Don't leave a thin edge of amalgam projecting over cavity margins on morsal surface, to crumble away later on and invite recurrence of decay.

Don't forget when inserting a large filling that the pressure required in filling expresses mercury from the first pellets, causing a surplus of mercury on the surface, and an unequal distribution of the mercury in the filling; avoid this by squeezing your amalgam between the fingers in such a way that one end shall contain more mercury than the other, then use pellets from the end having excess of mercury first, and finishing with the drier pellets.

Don't leave unsupported enamel on morsal surface when filling with amalgam, just because amalgam is plastic and can be packed in, while gold cannot.

Don't hurry the mixing of your filling; take time to get the alloy and mercury well rubbed together. If the mercury is not broken up and well distributed through the filling, the latter will be dry and crumbly, even though there is sufficient mercury present.—*Dominion D. J.*

DON'TS IN ORTHODONTIA.

By Charles E. Pearson, D. D. S., Toronto.

Don't correct irregularities for fun—unless you are a professional comedian.

Don't expand the arch if you can extract anything—even the centrals will do.

Don't leave a retainer on too long—till death is long enough.

Don't excite your patients over possible difficulties—they are apt to go to the other dentist.

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Don't take the spring out of an alignment wire—it's a good way to extract molars.

Don't use a simple appliance if you can make a complicated one—few men can.

FIVE DON'TS IN ORTHODONTIA.

By H. E. Eaton, D. D. S., Toronto.

(Read before the Toronto Dental Society.)

Don't attempt a case of orthodontia if you cannot seriously give it the necessary time and consideration.

Don't subject a child, say of eight years, to an operation that could as well wait until the age of fourteen or sixteen has been reached, just because it is an interesting case, and you are anxious to get at it.

Don't commit yourself to too many definite conclusions as to method, time, and cost of an operation, at the first examination or interview with your patient.

Don't become wedded to a few sterotyped appliances to meet all cases that come under your notice, thus dwarfing your inventive faculties. Rather handle each case on its own merits.

Don't fail to get and preserve models of your cases at the various stages of the operation. They will prove a satisfaction both to you and your patient.

DON'TS IN ORTHODONTIA.

By A. E. Webster, D. D. S., Toronto.

(Read before the Toronto Dental Society.)

Do not begin the correction of an irregularity until a diagnosis is made.

Do not wait until all the teeth are erupted to begin the correction of an irregularity. Anticipate the deformity and guide the teeth into position.

Do not forget that upon the proper occlusion of the teeth depends the success of every operation of facial orthopedia. The lower teeth are the guides to the upper.

In arriving at a diagnosis do not look at the irregular tooth alone. Examine all the teeth. Note the occlusion and the profile and facial expression.

BOOK REVIEWS.

Neurotic Disorders of Childhood—Including a Study of Auto and Intestinal Intoxications, Chronic Anaemia, Fever, Eclampsia, Epilepsy, Migraine, Chorea, Hysteria, Asthma, etc., etc. By B. K. Rachford, M. D., Professor of Diseases of Children, Medical College of Ohio, University of Cincinnati, Pediatrist to the Cincinnati, Good Samaritan and Jewish Hospitals, etc., 432 pages, Cloth. Price, $2.75 postpaid. E. B. Treat & Co., 241 W. 23rd St., New York, Publishers.

It is a well known fact that infants and children are especially predisposed to serious and complicated nervous disorders, and that this class of diseases has been very little understood by the general medical practitioner, and has in fact not been a matter of special study by neurologists. In this volume the author, who is a specialist in this line, very ably considers and treats these various neuroses.

The work shows a careful and painstaking effort upon the part of its author and is worthy of a careful study.

Diabetes Mellitus—Its Pathological Chemistry and Treatment. By Professor Carl Von Noorden; Translated by Florence Buchanon, D. SC. and I. Walker Hall, M. D. Volume seven of the Disorders of Metabolism and Nutrition. Cloth. Price, $1.50. E. B. Treat & Co., 241 W. 23rd St., N. Y. Publishers.

This thorough-going treatise on diabetes will prove a boon to a large class of patients, and should be welcomed by the physician.

The old fashioned routine treatment of restricting according to a fixed formula the carbohydrates of the diet or attempting to exclude them altogether, leaving the patient to make up the deficiency by eating mainly of proteids was most unsatisfactory, as was also the administration of opium or other active drugs and the giving of alkalies or alkaline waters without a frequent and thorough examination of the urine for much more than a determination of the amount of sugar and albumen present. Von Noorden in this volume acquaints us with the latest discoveries and conclusions concerning the origin, complications,

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They merit your support.

and dangers of diabetes as well as the most successful methods of avoiding and combatting them, and of curing the disease when a cure is possible.

The Inn of Rest—Divers Episodes in Hospital Life Relative to the Doctor, the Nurse, and the Patient. Being Volume Seven of the Doctor's Recreation Series. Charles Wells Moulton, Editor. Published by The Saalfield Publishing Co., Akron, Ohio.

The best review we can give of this volume is to outline the different subjects covered. The Quiet Inn by Frederick Langbridge is a poem of unusual excellence which first appears and this is followed by The Invalid's World—The Gibson Play—In a Hospital—In a Great Town Hospital—The Voice in the World of Pain—Nurses a la Mode—Inner Life of a Hospital—Nurse Miriam's Call—Half-an-hour's Chat With a Hospital Nurse—The Hospital Mistletoe—Pre-Christian Dispensaries and Hospitals—Nurse and Doctor—Hospital Scenes and Persons—Nursing as a Profession—The Red Cross Nurse—The Humors of Hospital Life.

There are some four full page illustrations and the work is well printed and bound in conformity with the other volumes of this series.

Carbonic Acid in Medicine—By Achilles Rose, M. D., New York, author of "Atonia Gastrica," etc. 12mo, Cloth, 268 pages. Price $1.00 net. Funk & Wagnalls Co., Publishers, 44 E. 23rd St., New York. 1905.

This book aims to set forth the fullest facts about the healing qualities of carbonic acid gas. These beneficial properties were known centuries ago, but they strangely passed into disuse until they have now become unjustly forgotten. The work is well written, and shows much original thought. It is an unquestioned fact that many very useful remedies of the past have been lost sight of, and no little to the disadvantage of the physician and his patient. A portrait of Jean Baptiste Von Helmont, who flourished from 1577 to 1644 serves as a very appropriate frontispiece.

Text-Book of Chemistry—For the Use of Students and Practitioners of Medicine, Dentistry and Pharmacy. By William Russell Jones, M. D., Ph. G., Professor of Medical

Chemistry and Toxicology, and Lecturer of Medical Diagnosis in the University Medical College, Richmond, Va. 8vo, cloth, 462 pages, illustrated. Price $2.50. P. Blakiston's Son & Co., Publishers, 1012 Walnut St., Philadelphia. 1905.

The author has endeavored to include in this volume all that is needed in chemistry for students of medicine, dentistry and pharmacy, and at the same time, care has been exercised to avoid the introduction of unnecessary material.

The text is based on a system of teaching which has been successfully followed for nine years; and the subject is presented in an inductive manner, commencing with simple statements and avoiding technical terms, until the student has begun to acquire familiarity with his work. The great trouble with most teachers of chemistry for medical and dental students, is, that they have attempted to teach too much—not that *too much* can be acquired, but in the effort to overtax the student in these sciences, but little if any good is obtained.

From an examination of the work, we can most heartily commend it. It is fully brought up with the latest decennial revision of the U. S. Pharmacopeia, and is in every way a fully up-to-date and valuable book.

TREATMENT OF SENSITIVE DENTIN IN SHALLOW CAVITIES.—Some cases of cavities are very difficult to obtund with chemicals. Shallow or three-walled cavities are difficult, because you cannot produce absorption by pressure. The dentin does not ordinarily absorb, it only transfers. To make the medicines penetrate they must be forced inward by cataphoresis, pressure, or heat, and to apply these measures is usually difficult in the cavities where we most desire to obtain an obtundent effect. I have had good results from applying a few crystals of menthol to shallow cavities and dissolving this in the cavity with a drop or two of absolute alcohol, and then throwing a steady but small stream of compressed air into the cavity until it is dry. I do not know whether the menthol acts chemically by absorption, or whether the action is to be regarded as the physical effect of evaporating these volatile drugs, so producing an excessive evaporation of the tooth-moisture.—*Dr. Geo. Zederbaum, Dental Register.*

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EDITOR:
WM. GIRD BEECROFT, D. D. S., Madison, Wis.
ASSOCIATE EDITORS:
ALBERT H. KETCHAM, D. D. S., Denver, Colo.
GEO. S. MARTIN, D. D. S., L. D. S., Toronto Junction, Ontario.

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THE ANNUAL REPORT OF THE PRESIDENT OF THE SANITOL CHEMICAL LABORATORY COMPANY SUBMITTED AT THE STOCKHOLDERS' MEETING, DECEMBER 4th, 1905.

Our eighth business year has closed and today at the ninth annual stockholders meeting, I take pleasure in respectfully submitting a report of the condition of the business during the fiscal year, December 1st, 1904 to December 1st, 1905.

The general condition of our company was never better than it is today, and in reading this report I wish you all to note carefully that the plans your Board of Directors started out to accomplish last year, are all well under way, and already show tangible and encouraging results.

The main work for the year has been, first, in disposing of our treasury stock, thereby increasing the number of our stockholders, and, second, in perfecting and placing new Sanitol products on the market.

Both have been successfully accomplished. Our stockholders have increased from less than 3,000 to about 5,000.

Three new preparations have been placed on the market; and we have made a start in introducing our business into foreign territory.

Despite the fact that no special efforts have been placed in building up trade, our business has grown in a most satisfactory manner, the prestige of Sanitol throughout the country was never higher. Our sales have increased over 82 per cent.

SALE OF THE TREASURY STOCK.

In order to gain funds to further develop our business, we proposed last December to dispose, if possible, of our treasury stock to dentists throughout the country during the present year. It is a great pleasure to me to announce to you that practically the entire amount of this stock has been subscribed.

Today, therefore, the condition of our treasury is strong in every way and a large surplus is held in reserve. We have now almost doubled the number of stockholders that we had a year ago, and today we can claim an almost united body of stockholders who are working faithfully for Sanitol's interests.

These new stockholders are mainly scattered in cities and towns all over the United States, that have never before been reached, thereby opening up new Sanitol territory. A good following also has been secured in Mexico, and a large following composed of the leaders of the profession obtained in Canada. This gives us more co-operation in sections where we previously were not well known.

INCREASE IN SALES.

Our aggressive campaign for the sale of Sanitol stock the past year has greatly extended the scope of our business. The injection of new life, notwithstanding little effort to increase sales, has had a favorable reflex action on the demand for our products.

The number of drug stores who handle Sanitol this year who did not handle the Sanitol products last year, has increased materially. Our hold among the wholesale druggists is stronger than ever before, the increased call for our goods forcing them to keep a larger supply always on hand. We can count thousands of new friends among druggists, department stores, etc., who now are stocked with our goods who previously never kept them.

As before stated, our increased output this year has been over 72 per cent, the total output being not quite three million packages.

CONVENTIONS.

During the past year we have had splendid exhibits at the following dental conventions:

Connecticut State Dental Association,
Illinois State Dental Society,
New York State Dental Society,
Kansas State Dental Association,
Missouri State Dental Society,
Massachusetts Dental Society,
Pennsylvania State Dental Society,
Michigan Dental Association,
Wisconsin State Dental Society,
Maine Dental Society,
New Jersey State Dental Society,
National Dental Association,
Northeastern Dental Association,
The Fraternal Dental Society.

In many cases our Sanitol preparations were used in the clinics, receiving favorable comment. This representation has always proven most effective advertising.

Our exhibit space in every instance became the headquarters of stockholders, and the thousands of dentists who attended these meetings became closer in touch with the Sanitol Company and the Sanitol preparations than ever before.

REPRESENTATIVES IN THE FIELD.

The Company has maintained during the past year a force of men varying from fifteen to twenty, scattered in different sections of the country. These gentlemen have kept in touch with the dentists and with the trade in a most effective manner. The work that they have accomplished has brought favorable results.

It is essential that a representative body of young men be kept constantly in contact with the profession and trade, and

I think you will agree with me that it is only by this means that we can preserve the growth of our business and keep our stockholders and trade in touch with the home office.

CANADA AND MEXICO TRADE.

Our Sanitol business is today established in Canada and Mexico. We have two representatives in Canada who are interesting dentists in Sanitol, the same policies governing our work in the United States being followed in Canada.

Similar plans are being carried out in Mexico through one representative and our goods are now on sale in the leading wholesale and retail drug stores of both countries. Furthermore we are receiving the earnest co-operation of the profession. In both countries during the next year, we will be able to show a large and profitable business without doubt.

Every dentist in Canada and in Mexico have received samples of the Sanitol preparations sent them complimentary by the Company and all are using them with satisfaction. This gives us new sources of prescriptions, and from time to time as the doctors call for samples, we will send supplies for demonstrative purposes in their offices.

NEW PRODUCTS.

We have placed on the market three new Sanitol products which have been welcomed and accorded good treatment by the trade and now enjoy a small but ever increasing sale:

SANITOL BATH POWDER,
SANITOL FACE CREAM,
SANITOL ANTISEPTIC SHAVING FOAM.

These preparations are without doubt the best in their line today. Each has been prepared with skill, and perfected after arduous and painstaking labor. They have the antiseptic properties of Sanitol Liquid, combined with peculiar ingredients unusual in such emollients, which make them of the greatest value.

The sale of the older products will be materially aided by the addition of the new, and bring added prestige to the Sani- l name.

ADVERTISING.

For the first time in the company's history, the Sanitol preparations have been advertised extensively to the public. This advertising has been carried on in fourteen of the largest magazines of general circulation published in America.

Although the large results from advertising of this kind are gained only after two or three years, we are certain that quite a percentage of this year's increase is due to this advertising. The dentist's recommendations of Sanitol reach only a small number of the total number of people. By advertising, we supplement the dentists' own recommendations, educating the people not only in the care of their teeth but urging them to go to a dentist, and as well often reaching people who are never seen by the dentist.

Our object in this advertising campaign is ethical and educational and in connection with our other selling plans is certain to bring good fruit.

In the dental magazines we have advertised our stock extensively. To this, we can trace very favorable returns. In the trade papers we have advertised our products and our special offers. This also has brought good reward.

OUR PLANT.

The general efficiency of our plant has been extended. We have put in larger and better machinery and our facilities for handling the manufacturing end of our business have been vastly increased.

Until we are able to realize on the hundreds of notes that have accumulated from the deferred payments of stock subscriptions, your company will be unable to erect the new laboratory and plant which is so sorely needed.

The site of this new plant has been practically decided upon and next year, before our present improved facilities are found inadequate, we hope to be installed in a new home.

DIVIDENDS.

In spite of our increased expenses the company has been enabled because of the increase in our business to declare three dividends, which have accumulated from the surplus created by the business profits, which equals the total dividend paid during the last fiscal year preceding.

Gentlemen, it is the fact that our company continues to pay through a period of years a series of good dividends, that stamps our business one of the phenomenal business successes of the country to-day. While many commercial houses are forced through mismanagement and unfavorable conditions to withdraw, and others, although continuing their trade relations, are unable to pay any dividends, the Sanitol Company has not only held its own, but progressed rapidly, dividing each year surplus profits with its satisfied stockholders.

Nothing could more practically demonstrate to you the solid financial basis upon which our business is conducted.

OUR PROPOSED PLANS FOR 1906.

I do not like to say that we expect to do certain things next year unless we have strong hopes of accomplishing them. It seems to me however, and this opinion is endorsed by all those now connected with the company, that our business should double during the next year.

We intend to let no opportunity slip by of bettering our business connections. We have the best dental and toilet preparation line in the country and by judicious management we can increase our business over one hundred fold.

RELATIONS WITH THE TRADE.

Now that our stock is entirely disposed of, our agency force is being reorganized and all efforts from this time on will be devoted to increasing our sales and improving our relations with the trade.

We wish to keep in touch with the big centers of population from which Sanitol is distributed; to continue the missionary work among dentists and druggists in the small cities; and extend in every way possible our service for moving our goods. We intend to extend our trade along every practicable line and to push our business aggressively into new as well as old territory.

It is our expectation to place a corps of twenty general salesmen in districts throughout the country to call on all the druggists, complementing the work of our other advertising. In addition, twenty detail salesmen will supplement the general selling force, it being their duty to call on the dentist, and keep Sanitol constantly before him.

EXPORT DEPARTMENT.

We are just opening an Export Department in connection with the Sanitol business that will treat with the sale of Sanitol through export houses into all the foreign countries of the world.

Americans who at home use Sanitol, in traveling abroad call for the Sanitol preparations wherever they go. This demand has brought in letters of inquiry from merchants all over the world, and we have come to the point, to-day, where it would be folly for us to further ignore this call and field of trade.

By a small outlay of money, it will be possible to gradually build up a large export business. This department has alre brought orders from foreign countries and with the aid of judicious sampling, together with a wide distribution of our literature, which is being translated into the foreign tongues, we will by the end of this coming year have an export trade that will be a most profitable investment.

The word "Sanitol" has been registered as our cable address, and a cable code adopted for the transaction of business.

ADVERTISING.

We propose to extend our advertising appropriation, because the results during the past year have been most favorable and because we believe through advertising, we can bring to you larger results in connection with our other work and the co-operation of the dentists, than we could by any other single method.

The magazine advertising will be extended. In the city of St. Louis we are now conducting a special newspaper advertising campaign, which has brought returns far exceeding expectations. In conjunction with druggists' window displays, trade has been stimulated and more active co-operation of each druggist secured.

It may be found advisable during the year to carry out similar newspaper campaigns in other large cities, like Boston, New York, Philadelphia, Baltimore, Washington, Chicago and San Francisco, conducting them at the same time our agents are working on the trade, thereby educating large masses of people in the merits of our products.

One of the greatest successes of the year's advertising has been in featuring the beautiful "Sanitol Girl." It is a work of art that easily finds a permanent place in the home, and acts as a constant reminder.

Our dental journal advertising on our preparations will be partially continued and the advertising in the druggists trade papers will be slightly extended in scope.

We wish to continue the policy of getting out advertising literature from time to time to be distributed among the profession and among the trade. By that means we are enabled to keep every one in touch with our preparations and give new ideas on how to use our goods and how their sale may be increased.

SAMPLING.

Our sampling is ever increasing. We believe that the dentists should be kept supplied with our preparations for use at the chair and for recommending to their patients. Our Sanitol Liquid Antiseptic is in greater demand and favor to-day than ever and we believe that as an antiseptic and oxidizing products being the best, should be in universal use.

Fellow stockholder in Sanitol:—I feel convinced that the steps we are taking are right and for the best good of all concerned. You know, however, that your co-operation with the management is at all times absolutely necessary. We must all pull together. Sanitol should always be kept at your operating chair, where it can be used, seen and prescribed, for our products being the best, shoud be in universal use.

I wish to convey to our strong body of stockholders my best wishes and congratulations. The business with which we are connected has been remarkably successful in the past and ought to be increasingly so in the future. Your support and active interest is appreciated, for you can do more towards increasing the business than any outsider, and thereby make your stock more valuable.

The strength of our organization is shown in the fact that we have practically no liabilities, and a surplus in the treasury which will enable us to place our products in every town in the United States.

I trust the management the past year has been satisfactory to each of you and that you feel that *your* interests have been protected and advanced. We have a record in the past to maintain and your directors in looking ahead into the future feel the utmost assurance that Sanitol is to-day only at the beginning of its prosperous career.

In closing I wish you to know that every suggestion for improvement is always appreciated and welcomed; and to assure you again that the smallest as well as the largest stockholder has equal privileges in our co-operative body.

Thanking you for your kind attention I am cordially and fraternally yours,

HERMAN C. G. LUYTIES,
President.

CHARLES C. CHITTENDEN, D. D. S.

Dr. Charles C. Chittenden died at his home in this city, December 15th, 1905, after an illness of several months duration.

Although not unexpected, his death will come as a shock to his many friends in the dental profession where he was well known because of his championship of the cause of higher educational standards. As chairman of the committee on colleges of the National Association of Dental Examiners he has wielded an influence of lasting effect.

Dr. Chittenden was born among the hills of Nunda, Livingston county, New York, May 10th, 1842. In 1855 his father, Dr. Nelson Chittenden removed to Madison, Wisconsin with his family, and the family have resided here since that time.

Dr. Chittenden was a man of education, not only in the line of his profession, but as a man of broad training. Before the war he attended the Madison high school and the University of Wisconsin. In 1866 he graduated from the Ohio College of Dental Surgery, and he was also a student at the Miami Medical College.

He was one of the organizers of the Wisconsin State Dental Society, and has several times served as its president; he was largely instrumental in getting the first dental law passed by the legislature of this state, and he has served as the president of the board practically continuously since its organization; he has always taken an active interest in the work of the National Dental Association and has served as its president; for many years he has been chairman of the committee on colleges of the National Association of Dental Examiners, and he has also served as the president of that body.

Dr. Chittenden was a man of genial disposition and was beloved by an ever widening circle of friends. His loss will be keenly felt both in his home city and in the dental profession generally.

He is survived by three sisters, Mrs. Flora B. Devendof, Mrs. L. C. Stewart and Miss Kate A. Chittenden.

CLUBBING OFFERS FOR 1906.

For a number of years we have made clubbing offers on dental magazines and we are again doing so for next year.

We have revised our usual plan however and for 1906 we are taking subscriptions only to The Dental Summary, The Dental Digest, and Items of Interest, in connection with The American Journal of Dental Science.

We are also making clubbing offers for next year on several popular magazines in connection with the Journal.

The Cosmopolitan magazine has been a leading popular magazine for eighteen years. With the recent change in ownership it has been much improved and it aims to be the best in its field. It contains regularly the best fiction, the best special articles on timely topics and the best illustrations that money can buy.

Its subscription price is one dollar per year, BUT WE ARE

The American Journal of Dental Science, The Digest Summary and Items of Interest for all of 1906 for $3.00.

OFFERING TO SEND YOU BOTH THE COSMOPOLITAN AND THE AMERICAN JOURNAL OF DENTAL SCIENCE FOR ALL OF 1906 FOR ONE DOLLAR.

We are also making clubbing offers on THE REVIEW OF REVIEWS and LIPPINCOTT'S MONTHLY MAGAZINE.

All of these clubbing offers are to be found in the advertising section of this issue and we hope that you will look them over and let The American Journal of Dental Science have the benefit of your subscription business.

CORRECT RELATIONS WITH COMPETITOR AND PATIENT.

By F. A. Lane, D. D. S., Macomb, Ill.

This is a very broad subject, and I wish it were in the hands of some one better able to handle it, as it is perhaps one of the most important factors in a successful practice. A person might have all the ability necessary to a successful career, and yet, of he cannot correct relations with his competitors, and especially with his patients, he must, I think, undoubtedly fail. I shall probably tell you some things that we all should do, and yet I may not do all these things myself. In regard to this, I will refer you to the old adage, "Do as I say, and not as I do."

To maintain correct relations with your local competitors and patients you should be straightforward and honest in your dealings with one another, careful of your personal appearance and habits. Careful of the appearance of your office, that it may be as attractive as possible—courteous to both competitor and patient, and be sure to accord the same courteous treatment to the honest patient that may come to your office that you would extend to the wealthiest.

Let your habits be above censure, and be temperate in all things.

If the dentists in your community have an agreement among themselves in regard to prices for certain operations, you should be extremely careful not to violate that agreement.

If you should have agreed not to advertise, except in the way of a professional card, be very careful that it does not convey to the reader more than it should. This calls for perfect confidence in each other.

The Cosmopolitan Magazine and The Am. Jour. of D. S. for all of 1906 for $1.00. See clubbing offers.

It is a noted fact that for the past fifteen years the dentists of Macomb have, almost without an exception, been on the best of terms—and have considered it a pleasure to have a brother practitioner come into the office to visit, borrow a much needed set of teeth, or other material or instrument, or to consult with one another on some bothersome condition, and I believe there has not been a refusal to loan either material, instrument or information. Nor have I any recollection of one dentist using the fact as an advertisement that Dr. So and So had come to him for information, to show his superiority over the other or to get business from another. This is as it should be, and has, perhaps, a greater influence toward making one competitor feel well toward the other,—and creating a desire to treat others well than anything I know of.

When a patient travels from one dentist to another complaining that he has a poor piece of work, or thinks that he has been overcharged—it is the most self-satisfying thing imaginable to bring to bear all of the professional courtesy possible, and use every effort to convince that patient that the work has been well done, providing that is the case, and if the work is not well done, the less said against the one who did the work is undoubtedly the fellow who has good words for all that will get that patient instead of he who would curry favor by abusing and mistreating another.

And he who has been liberal enough to practice the golden rule cannot help feeling that he has done far more good and is more at peace with himself and the whole world than he would be had he made unpleasant and slighting remarks about his brother practitioner, and then when he met him be ashamed to look him in the face for fear the patient had gone directly to that man and told him all the mean things he had said about him, which is probably just what a patient would do.

Again, when a patient comes to you with a good piece of work that he is satisfied with, but feels that he would like to have your opinion on that work,—it is, or should be, a pleasure to tell that patient what a nice piece of work he has.

This I find happens quite frequently, and I don't believe that a dentist ever loses anything by giving another all the credit he deserves. In speaking to the general public about a brother practitioner, the dentist should be very careful about making remarks detrimental as to his work, appliances, success or personal appearance, as I believe a dentist or any other

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person who says anything unkind of another not only lowers himself in the estimation of the person to whom he is telling, but also lowers himself in his own estimation, and it will react on him in every instance.

Elbert Hubbard says in one of his mottoes, "Speak well of every one if you speak of them at all—none of us is so very good."

In summing up the above, I should say to maintain correct relation with your local competitor speak well of him, favor him with the best advice when asked, and do everything possible to help one another along over perhaps one of the roughest roads that a man has to travel—namely, that of the practice of dentistry.

To maintain correct relations with his patients, the dentist should make a study of every patient who comes into his office and decide just what manner of treatment will suit that patient best. To be either sympathetic and reserved, or jolly, and inclined to laugh their troubles away—and treat them accordingly. Be even tempered and ever courteous, and should the patient become impatient with you, remember that one who is suffering from the pain that may be necessary to an operation in dentistry is not apt to be as good-natured as he would be if he were enjoying himself at a good dinner. So when they get a trifle angry and want to whip you, or tell you that they think you are the meanest man on earth and are trying to see how much you can hurt them, just keep in a good humor and keep on working, and the probability is they will mellow up and leave the office feeling that you are a pretty good sort of a fellow after all.

Never make a promise to a patient that you do not think you can fulfill, and after making a promise be careful to keep it.

When a patient comes to you and says that you promised to do so and so, and you think you did not, inform that patient in a quiet and firm manner that he is mistaken, and if you are sure you are right stick to it, and the chances are you will convince that patient that you mean to do what you say, and he will probably decide that he is mistaken, and wou will find that you have made a better friend—while if you tried to smooth the matter over and let him have his way, he will probably think that you were trying to beat him and after all he got the best of you.

Keep your office neat and make it appear as comfortable

Read our clubbing offers on dental and popular magazines on another page.

and homelike as possible, as there are a great many people who dread the going to the office as much as they do the operation. Keep all instruments out of sight as much as possible and be sure to have them all thoroughly sterilized.

Aim to give your patient the very best service that you can for the money, and if you make a mistake correct it, even if it becomes necessary to perform an operation the second time.

Ala Baba says: "Folks who never do anything more than they get paid for, never get paid for any more than they do."

In regard to prices on work, I believe that there could not be a greater inducement to the dentists of any community to do good work than the agreements that we have here in regard to prices, all aiming to charge the same price for similar operations, the said prices not being exorbitant in our estimation, but sufficient to enable us to do good work, and both the patient and the dentist profit thereby.

A great many people believe that cheap prices mean inferior work, which is doubtless true as a rule.

Never under any consideration make a public declaration in regard to any operation that you have performed for a certain person, and should the patient be so unfortunate as to create a scene in your office, which, if made public, would prove embarrassing to that patient, be very careful the same is never mentioned outside or referred to at any following engagement that you may have with that patient.

Therefore "to maintain correct relations with your local competitors and patients," extend to them the same courteous treatment that you would expect of them.—*Tri-State.*

SOME REMARKS ON VULCANITE AND OTHER BASES FOR DENTURES.

By F. V. Brooking, D. D. S., Macomb, Ill.

It has been my experience that in a small proportion of patients who are compelled to wear artificial dentures, vulcanite rubber, either red or black, causes inflammation of the mucous membrane, evidenced by a red, angry color, and accompanied by excessive shrinkage of the alveolar process, espec-

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ially in the case of the lower jaw. Sometimes in connection with this condition a burning sensation is felt by the patient. The inflammation can be stopped nearly at once by substituting a mental denture, and I believe a great deal less shrinkage will take place under a mental denture than a vulcanite one. I have in several instances arrested the inflamed condition caused by vulcanite by placing a denture of aluminum in that mouth, and the change in the appearance of the membrane was marked very soon afterward. In one case I overcame the burning sensation by substituting aluminum for rubber, but I believe this cannot always be depended upon. This burning sensation is the most difficult thing for the dentist to overcome in these cases, and I am very thankful that it occurs as seldom as it does.

In speaking of aluminum dentures, I wish to state that I have had splendid success in fitting swaged plates, but very poor success with cast ones, although I took every precaution myself, and also had them cast by men supposed to be experts, but with poor success.

I believe the best medium priced material to use in constructing a lower denture is Watts' metal, with ruber attachment, but they must be made thick enough to stand the work, and I have found them much stronger than rubber. The idea that the increased weight makes it easier for the patient to learn to use the denture, or contributes to comfort, has, however, been found incorrect. I hope to see the day when more gold and continuous gum plates can be made in the McDonough-Fulton County district.

Speaking of Watts metal for lower dentures, I have found the article sold and trade marked "Watts metal" superior to all others for the purpose. It has less taste.

TREATMENT OF IRREGULARITIES COMPARED WITH THE TREATMENT OF MALOCCLUSION OF THE TEETH.

By W. O. Talbot, D. D. S., New Orleans, La.

Irregularities of the teeth mean that one or more teeth occupy an abnormal position in the arch. It may be any one of the seven possible malpositions, or several of them combined in rotation, mesial, distal, buccal, or labial, lingual, elongated,

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or supra-occlusion, and infra-occlusion. These are positions teeth may occupy in either arch.

Malocclusion is a more comprehensive term. It includes all irregularities of the teeth, and has special reference to the relative positions of the occlusal planes of the teeth in the two arches when the jaws are closed in mastication. Teeth may be in very good alignment in the arches; and yet the lower arch may be mesial or distal to the upper, and the entire occlusion disturbed. The loss of one or two permanent teeth from either arch may prevent its development or cause a contraction of the arch and leaning of the remaining teeth to such an extent as to disturb the occlusion, impair mastication, and mar the facial lines, without producing any noticeable irregularity. Molars and bicuspids may not fully erupt, or the incisors may elongate until they impinge on the gums to the great discomfort of the patient, with the accompanying displacement of the lips, and yet no irregularity of the teeth would be noticed. Any first-course student in dentistry can arrange a set of artificial teeth in a regular curve of the arch, but few dentists indeed can arrange a set of teeth in perfect occlusion on an anatomical articulator Such a treatment may sound strange, but I judge from the cases I have seen.

Parents bring their children for treatment of malposed teeth when they are overcrowded in the arches, when there is too great space between the upper incisors, or when the irregularity amounts to a marked facial deformity, and request that the teeth be straightened. Not infrequently they insist that they only want the prominence of an upper cuspid relieved, or the upper teeth straightened because they protrude, and direct that a bicuspid be extracted to shorten and simplify the treatment. They claim the lower teeth need no attention, as they are straight enough. People know as much about irregularities of the teeth as their dentists have taught them, and but little more. If we should judge from the average expressions on the subject, the sum of the teaching has been, "Extract to make room." The interdependence of the shape of the arches upon each other, and the importance of retaining all the teeth, to secure perfect occlusion, has not reached the public mind, and it will not except through the dental profession. In determining the line of treatment to be pursued it is necessary that a correct diagnosis of the case be made.

One must consider the relative position of the arches and the jaws, whether mesial or distal to normal, the relation of each malposed tooth to its normal cusp locking, whether or not the harmony of the facial lines is disturbed by the malocclusion, age, and temperament of the patient, and whether permanent teeth have been lost. Upon this last question may hinge the treatment, for when all the teeth are present and the arches in normal relation mesiodistally, the teeth can be aligned in the arches in the normal line of occlusion, the cusps fitted in their places, normal occlusion established, and so the *malocclusion* will be corrected. In some cases where a few teeth have been lost for years, the space may be regained, artificial teeth inserted, and the *malocclusion* corrected. In such cases if teeth be extracted to make room for aligning the remaining teeth or to harmonize the size of the two arches and the teeth placed in the best possible relation, the occlusion will only be *improved* and not made perfect, though the *irregularity* will have been corrected.

When the lower arch of teeth is bi-laterally distal to the upper, whether it be in the mouth-breather with the narrowed arches, protruding upper incisors, and short upper lip, or in normal breathers with upper anterior teeth bunched and overlapped, the teeth can be correctly aligned in the arches, the bite jumped by bringing the lower jaw forward, and the teeth made to close in their normal relations; or the case intermaxillary anchorage may be used, forcing the upper teeth back and bringing the lower teeth forward until they come in correct delation, and so the *malocclusion* will be corrected If the distal occlusion be only unilateral, in young patients, the bite can be shifted on that side, and the *malocclusion* corrected.

Should the age of the patient, or previous loss of teeth, render such treatment inadvisable, then extraction in the upper arch may be resorted to in order to make room to *improve* the arrangement of the upper anterior teeth, and their occlusion with the lower, and so correct the *irregularity,* but not the *malocclusion*. However such treatment would, as a rule, seriously mar the facial lines.

When the lower arch of teeth is mesial to the upper, and the patient young, the lower arch may be retracted or the upper also moved slightly forward, as the case may require or permit, and the teeth of one arch brought into correct relation with those of the other, and the *malocclusion* corrected. Should extraction in such cases become necessary, the occlusion can only be improved and the *irregularity* corrected.

Therefore, claims to a distinction between treatment of

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irregularities and *malocclusion* are based upon the facts that malocclusion is a more comprehensive term and, in its treatment, requires more skill, time, patience, and a thorough knowledge of the parts and principles involved, and has for its object perfect occlusion and alignment, and therefore better service of the teeth in their primary function of mastication, and requires that all the teeth shall be retained or lost ones supplied; that so corrected the teeth are less liable to decay and disease, and the facial lines are restored to a beauty beyond approach when teeth are sacrificed, and the arches left too small; while the simple correction of irregularity requires less skill, time, patience, and knowledge, and also less teeth, for it allows extractions, and hence aims at *improved* occlusion and alignment, and usually results in marring the facial lines.

PYORRHEA ALVEOLARIS.

By J. Ernest Rehnstrom, D. D. S., Chicago, Ill.

It has been claimed that the treatment of pyorrhea alveolaris should be entrusted to specialists. That a great majority of the general practitioners have been woefully deficient in coping with this disease is an acknowledged fact. The great prevalance of incipient pyorrhea makes it imperative for the general practitioner to operate upon and treat this greatest disease of the mouth. There is a divergence of opinion as to the etiology of pyorrhea. I have no new theory to advance. My own opinion is that the disease is a local one and will respond readily to local treatment. The success I have had during the past three years with exclusive local treatment satisfies me beyond the question of a doubt on this point. I realize that skepticism exists to a great extent in our profession as to the treatment and cure of this trouble. Dr. Riggs demonstrated the efficacy of removing all deposits from the necks of all teeth affected with what then became known as "Riggs disease." Later Dr. Wm. J. Younger, of San Francisco, gave to the profession the results of his years of exhaustive experiments, care and treatment of pyorrhea alveolaris. To him more than any other today are we indebted for the marvelous success in its treatment and permanent cure. The method

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employed by him, with some additions, is practically what I have adopted, and to those who so ruthlessly extract teeth thus affected I make a strong plea to give the method of treatment a careful trial. I am satisfied that the results will make them ardent supporters of the theory that pyorrhea alveolaris, either in its incipient or chronic stage, will respond to local treatment.

I do not wish to take up your time by recounting the many methods and theories that are advanced, but will describe the method that I have adopted in the hope of interesting you. I wish to say, however, that the method adopted by me is the one that has been the most effective. Of the many others that I have tried in my efforts to relieve patients I shall not dwell on those I have discarded, but will acquaint you with that one now employed by me with such splendid success. Thorough asepsis is absolutely necessary. The operation is purely surgical, and too great care cannot be observed in perfect sterilization of all the instruments employed. I use a glass dish about the size of a finger-bowl. This bowl I fill in the proportion of two-thirds of water, and into this water I pour three or four drops of Cabot's sulpho-napthol. All instruments employed during the operation are constantly kept in this powerful germicide. Each instrument is returned to this receptacle when not in use. The mouth is then thoroughly rinsed with dioxygen for cleansing.

After making a careful examination of the teeth affected, I select one, two or three teeth as the present field of operation and inject a local anæsthetic into the pockets. I first remove the larger deposits from around the necks of the teeth, continuing this until I am satisfied that all the serumal calculi is removed from around the tooth from the gum line to the apex of the root. The operator must use especial care in removing this deposit, for the slightest particle allowed to remain will serve as a nucleus for the recurrence of the trouble. That delicacy of touch which will enable you to determine the presence of a slight deposit is only resultant from extended practice of this feature of the operation. In the removal of these deposits I use a varied assortment of scalers, etc., mostly of the Younger and Allport patterns. It is not necessary to lacerate the gum. Care should be taken to avoid this. If there is any excessive bleeding the application of hot water will arrest the hemorrhage. During the removal of the deposits, from time to time, I spray the mouth with a fragrant mouth wash, luke warm, and I use dioxygen frequently. After

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completing the operation of removing the deposits I thoroughly dry out the pockets, and then with a hypodermic syringe inject lactic acid, full strength. In the use of lactic acid care must be taken to keep the lactic acid from the gums, as it is slightly escharotic. This completes the treatment of the first sitting. It might be well to emphasize the importance of not using any wash or spray after using the lactic acid, because the lactic acid must not be washed out. The patient is dismissed, and at the next sitting three or four more teeth are similarly treated, and this follows until all the affected teeth have been thoroughly rid of the serumal calculus. Should any of the teeth be loose, silk ligatures or wire is employed, and these are allowed to remain in place until the teeth become firm. After the foregoing treatment I usually see my patient daily, each of these subsequent sittings being of short duration. At such times I cleanse the mouth, then inject lactic acid and dismiss the patient. In the course of two weeks or more you will find new and healthy tissue and a complete absence of pyorrhea. Should any of the teeth involved not yield promptly it is more than probable that the removal of the deposit at this point has not been thorough, and a renewal of the scaling process is advisable. When the patient is finally dismissed I advise a mouth wash and dentrifice and prophylactic toothbrush.

The treatment as here described has been followed by me in a very large number of cases during the three years I have been making my observations, and I am satisfied by the results that it is the best that can be used and the only one that should be employed in relieving our patients afflicted with this very common trouble.—*Items.*

A PHASE OR TWO OF PYORRHEA.

One or two phases of pyorrhea have been a sort of revelation to me, and the treatment originated, so far as I am concerned, with the man I shall refer to. He lost a large number of his teeth with the real pyorrhea, and he applied for treatment to a number of dentists. I have known him for a great many years, and about three years ago he came to me. He told me how many teeth he had lost. He told me that he had just pulled them out himself, and that he had cured all those

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remaining. He said that he had tried everything that he ever heard of, but that he cured the disease with application of common salt, and he did, too. The man is nearly seventy years old, and he has no pyorrhea about his mouth now. His gums are solid and healthy, and the recession has stopped. His teeth are so firm that I had no hesitation in making a bridge and attaching it to those teeth. He said that he used to work the salt down into the sockets with a toothpick. He did that several times each day, and when he brushed his teeth he used salt. I induced a lady teacher to try this method. Her pyorrhea was not so general as the other case, but she could squeeze pus out of the sockets, particularly of the superior incisors, at any time. She used the salt treatment, and I saw her about three months later, when the condition had almost entirely disappeared. There were only one or two places where I found any pus whatever.—*Dr. E. H. Allen, Review.*

TREATMENT OF PYORRHEA.

In some particulars my work is different from that of other operators. One difference is that in all inaccessible positions I invariably pack the pocket first. I syringe it out and clean it antiseptically and pack it in such a way as to life out temporarily the loose tissue, so that on future occasions I can see the surface that was hidden from me at the beginning. In those bad, inaccessible places I don't rely altogether on the sense of touch to know that the tooth has been cleaned and polished. There are many who criticize this proceeding, claiming that I am forcing away tissue which is already too far away from the tooth, but I maintain that if this can be done without seriously injuring it, and get the tooth surgically clean as well as the pocket, and then force back the tissue, I have brought healthy tissue down upon a healthy surface, and I usually get good results. I pack it away with gauze cut in such shape as to be most convenient for the desired position, and usually for the last five years I moisten it in a 25 per cent solution of pheno-sulphonic acid. This is not strong enough to be corrosive, but it is styptic and will control the bleeding.

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It also has a softening influence upon the calcific deposits. I have proved to the satisfaction of a great many who have watched it that it will dissolve deposits, and certainly in many cases where it was difficult to even scratch the deposits, so hard were they, before applying this treatment, afterward they could be removed very easily. Then if the case be one of extensive pocket, and by that I mean enveloping, perhaps, half the root of the tooth, I may keep it packed, and make it heal from the bottom as a surgical wound. Of course, if the peridental membrane has entirely lost its attachment it will never be re-established, and the best we can obtain is a mechanical union. So I sometimes in these very severe cases keep the pocket packed until it heals from the bottom—in other words not to allow the gum to draw tight at its margin, leaving a large cavity above which is going to be filled with infective material, seeping in and retained there because of the hugging of the gum at its margin. I sometimes find it necessary to make an opening through the gum high up rather than to stretch it at its margin, and clean the place through that.—*Dr. Elgin McWhinney, Review.*

NEW HAMPSHIRE DENTAL SOCIETY.

The twenty-ninth annual session of the New Hampshire Dental Society will be held at the Pemigewassett House, Plymouth, N. H. (Gateway to the White Mountains), May 8th. and 9th., 1906.

A DENTAL SCHOOL OF EXCEPTIONAL ADVANTAGES.

Of all the American dental schools, there is none with greater facilities or more liberal in its range of work than the dental department of the Medico-Chirurgical College of Philadelphia.

Here the students in dentistry are permitted to enjoy all the privileges of the students of the medical school, a privilege which is rarely accorded students of dental colleges. A sys-

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tem of quizzes is conducted absolutely free of charge which is a material advantage to the students.

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SAL HEPATICA VS. NATURAL MINERAL WATERS.

The superiority of SAL HEPATICA over the natural mineral waters that are epecially recommended in the Uric Acid Diathesis and the various forms of constipation is clearly shown by the following facts: By commingling lithium and sodium phosphates in proper proportions with certain of the "Bitter Water" salts, as represented by Sal Hepatica, a compound is secured that is superlatively more active than either the lithium or sodium salt alone, or, indeed, than any natural mineral water or any combination that can be effected. Recognizing this, the most eminent practitioners latterly have taken to prescribing Sal Hepatica in preference to the natural waters, with the result that the remedial action of the latter is enhanced, the untoward manifestations accruing reduced to a minimum and their palatability materially increased.

Sal Hepatica is very effective in limiting and reducing the amount of uric acid formed within the circulation and excreated by the kidneys, and is very freely absorbed and taken into the blood and as rapidly (along with the chemical products formed) eliminated by the excretory ducts or organs as is readily demonstrated by its presence, after a brief course thereof in perspiration and urine, the latter more particularly being doubled or trebled as to quantity and rendered decidedly alkaline.

THE ANTISEPTIC BABE.

By Edna Kingsley Wallace.

We can sterilize his bottles, we can boil his little mug;
We can bake his flannel bandages and disinfect the rug
That envelopes him when he partakes of medicated air,
But there's one impossibility that leaves us in dispair,—
And a not unjustifiable one, you will allow—
To wit: we fear 'twould never do to sterilize the cow!

So we feed the baby Medicus's hygienic dope,
And we wash his face with germicidal antiseptic soap;
And we brush his little toofums—or the place where they will be—
With diluted glyco-thymoline, most sanitari-lee;
Then despair to see a milky effervescence supervene
On a countenance which theretofore was surgically clean.

On another page we are making some good clubbing offers on dental and popular magazines.

Send us your subscriptions for 1906.

Thus although we strive to conquer every septic circumstance,
Yet we greatly fear a ghastly alimentary mischance;
For albeit we bake and boil his things, and scrub and soak
and souse,
As if in his anatomy forever cleaning house,—
The recklessness with which he sucks his vagrant tiny thumb
Imperils much his antiseptic little tum.

We are careful of his hours, we are thoughtful of his toys;
We are mindful of his sorrows, and judicious of his joys;
We are prayerfully considerate of needful discipline,
Of our little "Mother's Handbook" and the precepts writ
therein;
And we strive to render sterile all designed for mouth or tum,
But one frightful danger menaces—we cannot boil his thumb!

Harper's Magazine, August, 1905.

PRACTICAL HINTS, ETC.

SENSITIVE DENTINE.—I am using carbolic acid in a slightly different manner from Dr. Coghlan. After the dam is in position and the cavity dried out as well as can be with cotton and spunk, dip a piece of spunk in carbolic acid and place in cavity; then heat a burnisher or ball-headed plugger and apply to spunk, gently at first, and then with pressure, and repeat till all sensation is gone. In some patients the heat causes excruciating pain, and for those cases I use ethyl chloride, always being careful to place a napkin under the dam to prevent any overflow coming in contact with the face. Where these two methods are objectionable turn to the gas (Hurd System). You do not require to put a patient to the point of complete anesthesia or near it, in order to excavate sensative dentine. In fact, if your patient is not hysterical, very little gas is required, and the patient is quite conscious of everything going on, and can give you a rational answer at any time during the operation.—*Dr. E. Cunningham, Den. Journal.*

Independent dental journals are not published to make money—but to benefit the dental profession.
They merit your support.

COCAIN NOT SAFE.—Cocain is not always safe when used either hyperdermically or injected into a tooth pulp, as it will sometimes cause permanent absence of sensation in the parts surrounding. Cocain is an agent that should be used in all cases with extreme care. Even the most minute quantity, carried into the tissues, may cause very unpleasant results.—*Dr. Truman W. Brophy, Review.*

CROWNING LIVE TEETH.—It has been my practice for many years to use a crown with band and without post in anterior teeth whenever devitalization has not been affected for the reason that in all cases where it can be done upon the live stump the danger of the band coming into sight after a year or two does not exist; it is only the devitalized root that lengthens in that way, and especially in the mouths of patients of mature years.—*Dr. Geo. F. Grant, International.*

The all-gold shell, when telescoped over a huge amalgam filling, often results in failure because of the action of the mercury in the filling. And when this filling is anchored by screws other than gold and platinum the entirety will invariably result in failure, notwithstanding that the gold crown is constructed without a fault. The anchorage has been insufficient.—*Dr. B. J. Cigrand, Amer. Jour.*

MOULD FOR SEAMLESS CROWNS.—After the model for the crown has been carved, mix plaster and set model in so that only the cusps are covered. Remove the model, cut a guide groove in the plaster, replace model and oil slightly. Now run plaster around one side and when set trim it up and run the other side. This gives you a mold in three pieces, which has been found preferable for casting Melott's metal. The gold may now be swaged by any of the methods, and after the swaging is completed boil in water to facilitate the removal of the crown from the metal die.—*Dr. Homer Almon, Review.*

The Cosmopolitan Magazine and The Am. Jour. of D. S. for all of 1906 for $1.00. See clubbing offers.

SEAMLESS CROWNS.—I much prefer to make all crowns seamless, especially those with open face. Swaged over an accurate model of the tooth, they have a glove-like fit which I have been unable to attain by any other method. It is well to remember, however, that drawing a disk of gold plate to the form of a thimble does not increase its toughness, that a seamless crown so made must be thoroughly reinforced. The narrow bar at the gum margin should be doubled, and any bridge attachment should be so extended as not to depend for security upon a small area of the crown. I find a satisfaction in using seamless crowns for bridge supports in that when fitted there is no risk of the fit being impaired by solder running inside. The method of construction, however, is a mere personal matter, and has but little to do with the result.—*Dr. Wm. H. Trueman, Dental Brief.*

SENSITIVE DENTINE.—I have used several remedies for sensitive dentine, but have not yet found anything better than, after having dried the cavity out as well as possible with absorbent cotton (the rubber dam, of course, being in place), to wipe the cavity freely with carbolic acid, and then alcohol, followed by a blast of warm air until the medicants are thoroughly dried, when the bottom and walls of the cavity present a dried and whitened appearance. This has the effect of drying and destroying sensation in the outer portion of the contents of the dentinal tubules, which so readily conveys sensation to the dental pulp.—*Dr. F. T. Coghlan, Den. Jour.*

DR. HENRY MCMANUS, Hartford.—I believe that within a very few years the microscope and test tube will lead us to absolutely painless dentistry. The suggestion that we are working on living nerves all the time I do not quite agree with, for I do not believe that all the dentists in the world are killing all the pulps they can get their hands on. Much of the pain of dentistry is caused, I think, by heavy-handed carelessness on the part of the operator, and a lack of local anesthetics properly used.

Do not miss this. The Am. Jour. of D. S. and The Cosmopolitan Magazine for 1906 for $1.00.

Temporary Filling.—Absorbent cotton saturated with cement which has been mixed to a creamy consistency makes an excellent temporary filling material. It will last for months. If only required for a short time, nearly fill the cavity with dry cotton before inserting the plug. This will facilitate the removal of the filling when it becomes necessary.—*Dr. R. E. Sparks, International.*

Adherent Amalgam Fillings.—Prepare the cavity with sharp, smooth edges and mix the alloy to the consistency of soft wax. Place a few drops of creamy oxyphosphate of zinc in the cavity and squeeze it out with amalgam pressed firmly against it. Allow the cement to set, scrape and cleanse the edges, and finish with amalgam squeezed dry. This gives a dense adhesive filling that will not discolor.—*Dr. Joseph Head, Review.*

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